

**APPENDIX G**

**MONITORING WELL DEVELOPMENT LOGS**

- G-1 URSGWC MONITORING WELL DEVELOPMENT LOGS**
- G-2 HARDING ESE MONITORING WELL DEVELOPMENT LOGS**

**G-1**

**URSGWC MONITORING WELL DEVELOPMENT LOGS**

**MONITORING WELL  
DEVELOPMENT LOG**

**WELL NUMBER:** WC1-1S  
**PROJ. NO./NAME:** FOR98104/SAEP  
**Date Installed:** 03/22/1999  
**Depth of Well (ft):** 12

**Screened Interval:** 2-12 ft  
**Casing Diameter:** 2 inches

**SURGE DATA**

**Pre-Surge Sample**

**Depth (ft):** 7

**Date and Time:** 04/19/1999 11:00  
**DTW(ft):\*** 5.40  
**DTB(ft):\*\*** 12.10  
**Surge Date and Time:** 04/19/1999 11:00

**Conductivity:** 0.73  
**Temperature (°C):** 12.8  
**Turbidity (NTUs):** -10  
**pH:** 5.6  
**Surge Method:**

**Post-Surge Sample**

**Depth (ft):** 7

**Date and Time:** 04/19/1999 11:30  
**Comments:**

**Conductivity:** 0.75  
**Temperature:** 12.8  
**Turbidity (NTU's):** 2  
**pH:** 5.72

**PURGE DATA**

**Date and Time:** 04/19/1999 11:40  
**DTW(ft):** 5.40  
**Height of Water Column (ft):** 6.68

**Volume of Water in Casing (g):** 1.09  
**5 Casing Volumes (g):** 5.45  
**Purge Method:** Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
11:45	12.7	0.707	-10	5.78	50	
11:48	12.5	0.695	-10	5.82	55	
11:51	12.5	0.694	-10	5.83	64	
11:54	12.3	0.689	-10	5.85	74	

**DTW after purge:** 5.40 ft **Total gallons purged:** 75  
**Inspector:** Ricardo Colón

**\*DTW:** depth to water (from top of riser)

**\*\*DTB:** depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-1D  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 04/14/1999  
 Depth of Well (ft): 150

Screened Interval: 140 - 150 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 147  
 Conductivity: 3.21  
 Temperature (°C): 15.1  
 Turbidity (NTUs): 60  
 pH: 7.23  
 Surge Method: Surge block

Date and Time: 04/27/1999 13:20  
 DTW(ft):\* 3.43  
 DTB(ft):\*\* 147.75  
 Surge Date and Time: 04/27/1999 13:30

Post-Surge Sample

Depth (ft): 147  
 Conductivity: 11.9  
 Temperature: 17  
 Turbidity (NTU's): -10  
 pH: 6.89

Date and Time: 04/27/1999 14:45  
 Comments: \_\_\_\_\_

**PURGE DATA**

Date and Time: 04/27/1999 14:45  
 DTW(ft): 9.95  
 Height of Water Column (ft): 137.8

Volume of Water in Casing (g): 22.5  
 5 Casing Volumes (g): 112.5  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
15:25	17.6	350	350	6.84	55	
15:37	17.4	32.6	245	6.78	65	
15:45	17.7	32.7	210	6.77	75	
15:51	17.6	32.8	181	6.80	85	
15:58	17.5	32.9	173	6.80	90	
16:05	17.4	32.9	156	6.77	100	
16:14	17.4	33.4	166	6.80	111	
16:22	17.7	33.2	161	6.80	120	

DTW after purge: 23.10' (4.66' after 30 minutes) Total gallons purged: 125  
 Inspector: Ricardo Colón  
 \*DTW: depth to water (from top of riser) \*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-11  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 04/08/1999  
 Depth of Well (ft): 55

Screened Interval: 45 - 55 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 48

Date and Time: 04/27/1999 14:30  
 DTW(ft):\* 4.66  
 DTB(ft):\*\* 52.85  
 Surge Date and Time: 04/27/1999 14:50

Conductivity: 1.41  
 Temperature (°C): 14.6  
 Turbidity (NTUs): 319  
 pH: 6.59  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 52

Date and Time: 04/27/1999 16:25  
 Comments: \_\_\_\_\_

Conductivity: 14.5  
 Temperature: 19.5  
 Turbidity (NTU's): 999  
 pH: 6.91

**PURGE DATA**

Date and Time: 04/27/1999  
 DTW(ft): 4.70  
 Height of Water Column (ft): 48.15

Volume of Water in Casing (g): 7.86  
 5 Casing Volumes (g): 39.29  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
16:35	16.5	17.1	-10	6.51	20	
16:42	15.9	16.9	499	6.41	30	
16:50	15.6	18.8	215	6.35	55	
17:01	15.7	18.5	254	6.31	60	
17:05	15.7	28.5	216	6.36	65	

DTW after purge: 14.97' (5.15' after 10 minutes)

Total gallons purged: 70

Inspector: Ricardo Colón

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-1S  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 04/09/1999  
 Depth of Well (ft): 12

Screened Interval: 2 - 12 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 6

Date and Time: 04/21/1999 9:55  
 DTW(ft):\* 4.11  
 DTB(ft):\*\* 11.55  
 Surge Date and Time: 04/21/1999 10:00

Conductivity: 0.405  
 Temperature: 11.0  
 Turbidity (NTUs): 999  
 pH: 4.88  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 11

Date and Time: 04/21/1999 10:45  
 Comments: \_\_\_\_\_

Conductivity: 0.946  
 Temperature (°C): 10.3  
 Turbidity (NTU's): 999  
 pH: 4.67

**PURGE DATA**

Date and Time: 04/21/1999 10:45  
 DTW(ft): 4.18  
 Height of Water Column (ft): 7.37

Volume of Water in Casing (g): 1.2  
 5 Casing Volumes (g): 6.0  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH*	Gallons Purged	Comments
10:55	10.1	0.531	-10	4.03	22	*pH readings are no reliable  The pH sensor was later tested on tap water (after calibration), yielding results overly low
11:00	9.8	0.543	-10	4.08	28	
11:05	9.7	0.563	-10	4.03	36	
11:10	9.9	0.571	-10	4.03	45	

DTW after purge: 4.27 ft  
 Inspector: Ricardo Colón

Total gallons purged: 52

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-2D  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 04/01/1999  
 Depth of Well (ft): 62

Screened Interval: 52 - 62 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 55

Date and Time: 04/26/1999 10:30  
 DTW(ft):\* 4.34  
 DTB(ft):\*\* 61.25  
 Surge Date and Time: 04/26/1999 10:35

Conductivity: 16.8  
 Temperature (°C): 16.7  
 Turbidity (NTUs): 20  
 pH: 6.75  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 60

Date and Time: 04/26/1999 11:30  
 Comments:

Conductivity: 23.1  
 Temperature: 16.9  
 Turbidity (NTU's): -10  
 pH: 6.85

**PURGE DATA**

Date and Time: 04/26/1999  
 DTW(ft): 4.35  
 Height of Water Column (ft): 56.9

Volume of Water in Casing (g): 9.24  
 5 Casing Volumes (g): 46.2  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
11:40	16.3	27.8	425	6.78	40	
11:45	16.4	27.7	-10	6.79	60	
11:48	16.5	28.2	-10	6.77	80	
11:51	16.3	28.3	-10	6.81	100	

DTW after purge: 5.85 ft  
 Inspector: Ricardo Colón

Total gallons purged: 105

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-2I  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 03/30/1999  
 Depth of Well (ft): 55

Screened Interval: 45 - 55 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 50

Date and Time: 04/21/1999 13:00  
 DTW(ft):\* 4.83  
 DTB(ft):\*\* 51.43  
 Surge Date and Time: 04/21/1999 13:25

Conductivity: 4.2  
 Temperature (°C): 14.0  
 Turbidity (NTUs): 657  
 pH: 4.19  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 52

Date and Time: 04/21/1999 14:20  
 Comments: \_\_\_\_\_

Conductivity: 11.6  
 Temperature: 14.3  
 Turbidity (NTU's): 999  
 pH: 4.70

**PURGE DATA**

Date and Time: 04/21/1999 14:20  
 DTW(ft): 4.82  
 Height of Water Column (ft): 46.6

Volume of Water in Casing (g): 7.61  
 5 Casing Volumes (g): 38.04  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH*	Gallons Purged	Comments
14:29	14.5	11.8	-10	4.64	70	*pH readings are no reliable  The pH sensor was later tested on tap water (after calibration), yielding results overly low
14:32	14.4	12.1	-10	4.63	90	
14:36	14.4	11.9	-10	4.65	105	
14:40	14.5	12	-10	4.67	120	

DTW after purge: 4.47 ft  
 Inspector: Ricardo Colón

Total gallons purged: 125

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

**WELL NUMBER:** WC2-3D  
**PROJ. NO./NAME:** FOR98104/SAEP  
**Date Installed:** 04/13/1999  
**Depth of Well (ft):** 85

**Screened Interval:** 74.5 - 84.5 ft  
**Casing Diameter:** 2 inches

**SURGE DATA**

**Pre-Surge Sample**

**Depth (ft):** 80

**Date and Time:** 04/27/1999 10:30  
**DTW(ft):\*** 4.61  
**DTB(ft):\*\*** 84.05  
**Surge Date and Time:** 04/27/1999 10:35

**Conductivity:** 0.463  
**Temperature:** 15.1  
**Turbidity (NTUs):** 41  
**pH:** 6.57  
**Surge Method:** Surge block

**Post-Surge Sample**

**Depth (ft):** 84

**Date and Time:** 04/27/1999  
**Comments:** \_\_\_\_\_

**Conductivity:** 12.2  
**Temperature (°C):** 16.5  
**Turbidity (NTU's):** -10  
**pH:** 6.54

**PURGE DATA**

**Date and Time:** 04/27/1999  
**DTW(ft):** 5.47  
**Height of Water Column (ft):** 78.58

**Volume of Water in Casing (g):** 12.8  
**5 Casing Volumes (g):** 64.1  
**Purge Method:** Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
11:40	16.6	11.7	65	6.24	55	
11:43	16.3	17.9	12	6.24	70	
11:46	16.3	18.2	14	6.26	80	
11:49	16.3	18.4	13	6.26	90	
11:52	16.4	18.5	13	6.24	100	

**DTW after purge:** 5.20 ft  
**Inspector:** Ricardo Colón

**Total gallons purged:** 110

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-3I  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 03/26/1999  
 Depth of Well (ft): 55

Screened Interval: 45 - 55 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 45

Date and Time: 04/20/1999 14:25  
 DTW(ft):\* 3.20  
 DTB(ft):\*\* 53.80  
 Surge Date and Time: 04/20/1999 14:25

Conductivity: 0.662  
 Temperature: 12.0  
 Turbidity (NTUs): 130  
 pH: 6.42  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 55

Date and Time: 04/20/1999 15:15  
 Comments: \_\_\_\_\_

Conductivity: 7.7  
 Temperature (°C): 12.8  
 Turbidity (NTU's): 466  
 pH: 6.28

**PURGE DATA**

Date and Time: 04/20/1999 15:20  
 DTW(ft): 3.20  
 Height of Water Column (ft): 51.8

Volume of Water in Casing (g): 8.45  
 5 Casing Volumes (g): 42.27  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
15:27	13.8	11.7	-10	6.20	36	
15:32	14.0	11.5	-10	6.23	47	
15:35	14.0	11.5	-10	6.28	55	
15:38	14.0	11.6	-10	6.28	65	
15:41	14.0	11.6	-10	6.29	75	
15:44	14.2	11.6	-10	6.29	90	

DTW after purge: 3.35 ft  
 Inspector: Ricardo Colón

Total gallons purged: 95

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

**WELL NUMBER:** WC2-3S  
**PROJ. NO./NAME:** FOR98104/SAEP  
**Date Installed:** 03/30/1999  
**Depth of Well (ft):** 12

**Screened Interval:** 2 - 12 ft  
**Casing Diameter:** 2 inches

**SURGE DATA**

**Pre-Surge Sample**

**Date and Time:** 04/21/1999 12:40  
**DTW(ft):\*** 5.75  
**DTB(ft):\*\*** 11.71  
**Surge Date and Time:** 04/21/1999 12:40

**Depth (ft):** 9  
**Conductivity:** 9.3  
**Temperature (°C):** 10.7  
**Turbidity (NTUs):** 999  
**pH:** 5.17  
**Surge Method:** Surge block

**Post-Surge Sample**

**Date and Time:** 04/21/1999 13:25  
**Comments:** \_\_\_\_\_

**Depth (ft):** 12  
**Conductivity:** 8.69  
**Temperature:** 9.9  
**Turbidity (NTU's):** 999  
**pH:** 4.43

**PURGE DATA**

**Date and Time:** 04/21/1999  
**DTW(ft):** 5.75  
**Height of Water Column (ft):** 5.96

**Volume of Water in Casing (g):** 0.97  
**5 Casing Volumes (g):** 4.86  
**Purge Method:** Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
13:34	9.8	7.8	-10	5.06	24	
13:40	9.7	7.32	-10	5.11	36	
13:44	9.7	7.07	-10	5.03	43	
13:47	9.7	6.92	-10	5.13	50	
13:51	9.6	6.81	-10	5.16	58	
13:55	9.6	6.64	-10	5.18	65	
13:58	9.6	6.56	-10	5.05	72	
14:01	9.6	6.66	-10	6.11	80	
14:04	9.6	6.52	-10	5.15	88	
14:07	9.6	6.5	-10	5.12	94	

**DTW after purge:** 5.66 ft  
**Inspector:** Ricardo Colón

**Total gallons purged:** 100

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)



Screened Interval: 2 - 12 ft  
Casing Diameter: 2 inches

### Pre-Surge Sample

Depth (ft): 7

Conductivity:	0.230
Temperature:	12.7
Turbidity (NTUs):	-10
pH:	6.71
Surge Method:	Surge block

## Depth (ft): 7

Conductivity:	0.249
Temperature (°C):	11.9
Turbidity (NTU's):	999
pH:	6.85

Date and Time:	04/19/1999	16:30
DTW(ft):	5.03	
Height of Water Column (ft):		6.77

Volume of Water in Casing (g):	1.1
5 Casing Volumes (g):	5.5
Purge Method:	Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
16:40	11.7	0.222	13	6.68	17	The water seems to be too cloudy for a 13 NTU reading
16:45	11.7	0.222	-10	6.65	30	
16:50	11.6	0.221	-10	6.67	35	
16:54	11.6	0.218	-10	6.66	50	

Total gallons purged:	55
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\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-5I  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 10/25/1999  
 Depth of Well (ft): 40 ft

Screened Interval: 30 - 40 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 35

Date and Time: 11/04/1999 9:40  
 DTW(ft):\* 7.02  
 DTB(ft):\*\* 39.89  
 Surge Date and Time: 11/04/1999 9:40

Conductivity: 16  
 Temperature (°C): 12.9  
 Turbidity (NTUs): 999  
 pH: 6.58  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 35

Date and Time: 11/04/1999 9:43  
 Comments:

Conductivity: 17.1  
 Temperature: 14  
 Turbidity (NTU's): 999  
 pH: 6.65

**PURGE DATA**

Date and Time: 11/04/1999  
 DTW(ft): 7.30  
 Height of Water Column (ft): 32.87

Volume of Water in Casing (g): 10.73  
 5 Casing Volumes (g): 53.66  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
9:45	12.5	17.4	999	6.61	75	
9:46	13.3	17.4	999	6.61	80	
9:47	13.8	17.4	999	6.61	85	
9:49	13.9	17.5	999	6.71	90	

DTW after purge: 7.02 ft

Total gallons purged: 90

Inspector: Steve G. Vallianos

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-5S  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 03/23/1999  
 Depth of Well (ft): 12

Screened Interval: 2 - 12 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

**Pre-Surge Sample**

Depth (ft): 9

Date and Time: 04/20/1999 9:40  
 DTW(ft):\* 7.26  
 DTB(ft):\*\* 11.82  
 Surge Date and Time: 04/20/1999 9:40

Conductivity: 0.160  
 Temperature: 12.0  
 Turbidity (NTUs): 999  
 pH: 6.05  
 Surge Method: Surge block

**Post-Surge Sample**

Depth (ft): 9

Date and Time: 04/20/1999 10:25  
 Comments: \_\_\_\_\_

Conductivity: 0.170  
 Temperature (°C): 11.5  
 Turbidity (NTU's): 999  
 pH: 5.7

**PURGE DATA**

Date and Time: 04/20/1999 10:25  
 DTW(ft): 7.20  
 Height of Water Column (ft): 4.62

Volume of Water in Casing (g): 0.75  
 5 Casing Volumes (g): 3.77  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
10:35	11.6	0.17	-10	5.73	20	
10:39	11.6	0.177	-10	5.72	38	
10:43	11.5	0.178	-10	5.76	36	
10:47	11.4	0.179	-10	5.6	44	
10:50	11.6	0.179	-10	5.61	48	
10:53	11.6	0.176	-10	5.57	52	
10:56	11.6	0.179	-10	5.57	56	

DTW after purge: 7.22 ft  
 Inspector: Ricardo Colón

Total gallons purged: 60

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC2-6I  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 10/27/1999  
 Depth of Well (ft): 50 ft

Screened Interval: 40 - 50 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

**Pre-Surge Sample**

Depth (ft): 41

Date and Time: 11/04/1999 11:47  
 DTW(ft):\* 4.54  
 DTB(ft):\*\* 46.99  
 Surge Date and Time: 11/04/1999 11:47

Conductivity: 8.49  
 Temperature (°C): 15  
 Turbidity (NTUs): 999  
 pH: 6.35  
 Surge Method: Surge block

**Post-Surge Sample**

Depth (ft): 41

Date and Time: 11/04/1999 11:59  
 Comments: \_\_\_\_\_

Conductivity: 10.9  
 Temperature: 15.4  
 Turbidity (NTU's): 999  
 pH: 6.76

**PURGE DATA**

Date and Time: 11/04/1999  
 DTW(ft): 4.54  
 Height of Water Column (ft): 42.45

Volume of Water in Casing (g): 13.86  
 5 Casing Volumes (g): 69.30  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
11:56	14.8	11.3	999	6.67	55	
11:57	15.3	11.4	999	6.7	60	
11:59	15	11.5	999	6.73	65	
12:00	15.2	11.5	999	6.71	70	

DTW after purge: 4.81 ft  
 Inspector: Steve G. Vallianos

Total gallons purged: 75

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC3-1D  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 11/02/1999  
 Depth of Well (ft): 85 ft

Screened Interval: 75 - 85 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 80

Date and Time: 11/04/1999 14:22  
 DTW(ft):\* 4.00  
 DTB(ft):\*\* 84.50  
 Surge Date and Time: 11/04/1999 14:22

Conductivity: 3.10  
 Temperature (°C): 21.5  
 Turbidity (NTUs): 967  
 pH: 6.96  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 80

Date and Time: 11/04/1999 14:40  
 Comments: \_\_\_\_\_

Conductivity: 13.3  
 Temperature: 14.2  
 Turbidity (NTU's): 999  
 pH: 6.64

**PURGE DATA**

Date and Time: 11/04/1999 14:40  
 DTW(ft): 4.00  
 Height of Water Column (ft): 80.5

Volume of Water in Casing (g): 26.28  
 5 Casing Volumes (g): 131.42  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
15:14	13.8	13.9	999	6.79	100	
15:16	14.1	14.3	999	6.63	105	
15:18	13.7	15.5	992	6.64	110	
15:19	14.1	15.8	559	6.54	115	
15:20	14.0	16.2	255	6.66	120	
15:21	12.8	16	135	6.66	125	
15:22	13.4	16.3	136	6.58	130	
15:24	13.6	16.5	136	6.55	135	
15:27	13.8	16.8	136	6.61	140	

DTW after purge: 4.02

Total gallons purged: 145

Inspector: Steve G. Vallianos

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC3-11  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 11/03/1999  
 Depth of Well (ft): 40

Screened Interval: 30 - 40 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 35

Date and Time: 11/04/1999 13:29  
 DTW(ft):\* 6.90  
 DTB(ft):\*\* 38.90  
 Surge Date and Time: 11/04/1999 13:29

Conductivity: 3.36  
 Temperature (°C): 15.5  
 Turbidity (NTUs): 102  
 pH: 7.38  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 35

Date and Time: 11/04/1999 13:36  
 Comments: \_\_\_\_\_

Conductivity: 3.42  
 Temperature: 19.1  
 Turbidity (NTU's): 275  
 pH: 7.47

**PURGE DATA**

Date and Time: 11/04/1999 13:38  
 DTW(ft): 6.90  
 Height of Water Column (ft): 33.1

Volume of Water in Casing (g): 10.81  
 5 Casing Volumes (g): 54.04  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
13:41	14.3	3.42	100	7.45	30	
13:47	14.3	3.41	35	7.50	35	
13:52	14.3	3.37	15	7.44	40	
13:57	14.3	3.37	15	7.47	45	
14:03	14.3	3.38	14	7.40	50	

DTW after purge: 6.90 ft  
 Inspector: Steve G. Vallianos

Total gallons purged: 55

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

WELL NUMBER: WC3-2D  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 10/29/1999  
 Depth of Well (ft): 63 ft

Screened Interval: 53 - 63 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

**Pre-Surge Sample**

Depth (ft): 62

Date and Time: 11/05/1999 9:40  
 DTW(ft):\* 2.85  
 DTB(ft):\*\* 62.40  
 Surge Date and Time: 11/05/1999 9:40

Conductivity: 1.19  
 Temperature (°C): 14.3  
 Turbidity (NTUs): 496  
 pH: 7.29  
 Surge Method: Surge block

**Post-Surge Sample**

Depth (ft): 60

Date and Time: 11/05/1999 9:43  
 Comments: \_\_\_\_\_

Conductivity: 7.19  
 Temperature: 14.1  
 Turbidity (NTU's): 497  
 pH: 6.43

**PURGE DATA**

Date and Time: 11/05/1999 9:46  
 DTW(ft): 2.85  
 Height of Water Column (ft): 59.55

Volume of Water in Casing (g): 19.44  
 5 Casing Volumes (g): 97.22  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
9:47	14.3	8.76	454	6.39	65	
9:48	14.3	8.85	114	6.36	70	
9:49	14.3	9.04	114	6.45	75	
9:50	14.3	9.10	200	6.36	80	
9:51	14.3	9.21	116	6.40	85	
9:52	14.3	9.30	116	6.36	90	
9:53	14.3	9.35	113	6.35	95	

DTW after purge: 2.95 ft

Total gallons purged: 100

Inspector: Steve G. Vallianos

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

**WELL NUMBER:** WC3-2I  
**PROJ. NO./NAME:** FOR98104/SAEP  
**Date Installed:** 11/03/1999  
**Depth of Well (ft):** 40

**Screened Interval:** 30 - 40 ft  
**Casing Diameter:** 2 inches

**SURGE DATA**

**Pre-Surge Sample**

**Depth (ft):** 39

**Date and Time:** 11/05/1999 8:43  
**DTW(ft):\*** 2.85  
**DTB(ft):\*\*** 39.01  
**Surge Date and Time:** 11/05/1999 8:43

**Conductivity:** 0.406  
**Temperature (°C):** 11.9  
**Turbidity (NTUs):** 117  
**pH:** 6.24  
**Surge Method:** Surge block

**Post-Surge Sample**

**Depth (ft):** 36

**Date and Time:** 11/04/1999 8:55  
**Comments:** \_\_\_\_\_

**Conductivity:** 0.827  
**Temperature:** 12.9  
**Turbidity (NTU's):** 113  
**pH:** 6.45

**PURGE DATA**

**Date and Time:** 11/05/1999 8:55  
**DTW(ft):** 2.85  
**Height of Water Column (ft):** 36.16

**Volume of Water in Casing (g):** 11.81  
**5 Casing Volumes (g):** 59.00  
**Purge Method:** Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
8:57	14.6	1.42	189	6.63	40	
8:59	14.5	1.53	114	6.63	45	
9:01	14.6	1.56	77	6.64	50	
9:03	14.5	1.52	107	6.64	55	
9:05	14.7	1.59	49	6.64	60	
9:07	14.5	1.61	91	6.69	65	
9:09	14.6	1.57	100	6.65	70	
9:11	14.5	1.61	109	6.69	75	

**DTW after purge:** 3.99 ft

**Total gallons purged:** 70

**Inspector:** Steve G. Vallianos

**\*DTW:** depth to water (from top of riser)

**\*\*DTB:** depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC5-1D  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 04/16/1999  
 Depth of Well (ft): 85

Screened Interval: 74.5 - 84.5 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

**Pre-Surge Sample**

Depth (ft): 80

Date and Time: 04/26/1999 14:55  
 DTW(ft):\* 5.50  
 DTB(ft):\*\* 81.40  
 Surge Date and Time: 04/26/1999 15:00

Conductivity: 0.396  
 Temperature: 14.0  
 Turbidity (NTUs): -10  
 pH: 7.23  
 Surge Method: Surge block

**Post-Surge Sample**

Depth (ft): 81

Date and Time: 04/26/1999 16:00  
 Comments: \_\_\_\_\_

Conductivity: 20.7  
 Temperature (°C): 15.1  
 Turbidity (NTU's): 999  
 pH: 6.89

**PURGE DATA**

Date and Time: 04/26/1999 16:00  
 DTW(ft): 5.45  
 Height of Water Column (ft): 75.95

Volume of Water in Casing (g): 12.4  
 5 Casing Volumes (g): 62.0  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
16:12	15	30.2	30	6.78	55	
16:16	15	30.9	145	6.76	90	
16:20	15	32.5	N/A*		100	* Horiba U-10 Unit "died" The battery needed to be replaced

DTW after purge: 5.45 ft  
 Inspector: Ricardo Colón

Total gallons purged: 115

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**MONITORING WELL  
DEVELOPMENT LOG**

WELL NUMBER: WC5-1S  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 03/22/1999  
 Depth of Well (ft): 12

Screened Interval: 2 - 12 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 5

Date and Time: 04/19/1999 13:00  
 DTW(ft):\* 2.03  
 DTB(ft):\*\* 11.35  
 Surge Date and Time: 04/19/1999 13:00

Conductivity: 0.257  
 Temperature: 11.9  
 Turbidity (NTUs): 441  
 pH: 6.62  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 5

Date and Time: 04/19/1999 13:45  
 Comments: \_\_\_\_\_

Conductivity: 0.236  
 Temperature (°C): 12.6  
 Turbidity (NTU's): 999  
 pH: 6.92

**PURGE DATA**

Date and Time: 04/19/1999 13:45  
 DTW(ft): 2.03  
 Height of Water Column (ft): 9.32

Volume of Water in Casing (g): 1.52  
 5 Casing Volumes (g): 7.61  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
13:55	11.5	0.225	-10	6.75	40	
13:58	11.3	0.229	-10	6.7	44	
14:03	11.4	0.221	-10	6.73	50	
14:05	11.2	0.222	-10	6.78	55	

DTW after purge: 2.03 ft  
 Inspector: Ricardo Colón

Total gallons purged: 55

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

Screened Interval: 30 - 40 ft  
Casing Diameter: 2 inches

## SURGE DATA

Depth (ft): 35

Conductivity:	2.15
Temperature:	14.9
Turbidity (NTUs):	300
pH:	6.81
Surge Method:	Surge block

Depth (ft): 40

Conductivity:	<u>2.10</u>
Temperature (°C):	<u>16.0</u>
Turbidity (NTU's):	<u>999</u>
pH:	<u>6.37</u>

## PURGE DATA

Volume of Water in Casing (g):	<u>5.61</u>
5 Casing Volumes (g):	<u>28.1</u>
Purge Method:	Submersible pump

[illegible]

Total gallons purged:	150
-----------------------	-----

\*\*DTB: depth to bottom (from top of riser)

\*DTW: depth to water (from top of riser)

WELL NUMBER: WC5-2S  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 03/23/1999  
 Depth of Well (ft): 12

Screened Interval: 2 - 12 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 7

Date and Time: 04/19/1999 14:20  
 DTW(ft):\* 5.70  
 DTB(ft):\*\* 11.90  
 Surge Date and Time: 04/19/1999 14:20

Conductivity: 0.275  
 Temperature: 11.7  
 Turbidity (NTUs): 999  
 pH: 5.97  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 7

Date and Time: 04/19/1999 15:05  
 Comments: \_\_\_\_\_

Conductivity: 0.265  
 Temperature (°C): 11.8  
 Turbidity (NTU's): 999  
 pH: 5.97

**PURGE DATA**

Date and Time: 04/19/1999 15:05  
 DTW(ft): 5.71  
 Height of Water Column (ft): 6.19

Volume of Water in Casing (g): 1.01  
 5 Casing Volumes (g): 5.05  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
15:15	10.4	0.265	-10	6.26	17	Water has a very clear appearance
15:18	10.4	0.261	-10	6.24	25	
15:21	10.4	0.265	-10	6.25	40	
15:25	10.2	0.262	-10	6.24	47	

DTW after purge: 5.71 ft

Total gallons purged: 50

Inspector: Ricardo Colón

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

WELL NUMBER: WC5-3S  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 04/15/1999  
 Depth of Well (ft): 12

Screened Interval: 2 - 12 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 11

Date and Time: 04/26/1999 13:35  
 DTW(ft):\* 4.75  
 DTB(ft):\*\* 11.67  
 Surge Date and Time: 04/26/1999 14:00

Conductivity: 0.556  
 Temperature: 13.3  
 Turbidity (NTUs): 999  
 pH: 6.96  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 11

Date and Time: 04/26/1999 14:45  
 Comments: 4.75

Conductivity: 0.542  
 Temperature (°C): 14.2  
 Turbidity (NTU's): 794  
 pH: 6.41

**PURGE DATA**

Date and Time: 04/26/1999 14:45  
 DTW(ft): 4.75  
 Height of Water Column (ft): 6.92

Volume of Water in Casing (g): 1.13  
 5 Casing Volumes (g): 5.65  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
14:50	12.5	0.423	-10	6.3	15	
14:53	12.4	0.426	-10	6.3	25	
15:03	12.3	0.434	-10	6.29	45	
15:00	12.2	0.436	-10	6.28	50	

DTW after purge: 4.76  
 Inspector: Ricardo Colón

Total gallons purged: 55

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

WELL NUMBER: WC6-11  
 PROJ. NO./NAME: FOR98104/SAEP  
 Date Installed: 03/24/1999  
 Depth of Well (ft): 50

Screened Interval: 40 - 50 ft  
 Casing Diameter: 2 inches

**SURGE DATA**

Pre-Surge Sample

Depth (ft): 40

Date and Time: 04/20/1999 11:15  
 DTW(ft):\* 3.97  
 DTB(ft):\*\* 50.00  
 Surge Date and Time: 04/20/1999 11:25

Conductivity: 0.489  
 Temperature: 12.3  
 Turbidity (NTUs): -10  
 pH: 5.95  
 Surge Method: Surge block

Post-Surge Sample

Depth (ft): 40

Date and Time: 04/20/1999 12:20  
 Comments: \_\_\_\_\_

Conductivity: 5.73  
 Temperature (°C): 13.0  
 Turbidity (NTU's): 987  
 pH: 5.74

**PURGE DATA**

Date and Time: 04/20/1999 12:20  
 DTW(ft): 4.14  
 Height of Water Column (ft): 45.86

Volume of Water in Casing (g): 7.48  
 5 Casing Volumes (g): 37.42  
 Purge Method: Submersible pump

Time	Temperature	Conductivity	Turbidity (NTUs)	pH	Gallons Purged	Comments
12:30	13.5	8.36	-10	5.71	54	
12:35	13.8	8.54	-10	5.74	75	
12:39	13.9	8.73	-10	5.74	85	
12:42	14.0	8.60	-10	5.74	110	

DTW after purge: 4.08 ft

Total gallons purged: 110

Inspector: Ricardo Colón

\*DTW: depth to water (from top of riser)

\*\*DTB: depth to bottom (from top of riser)

**G-2**

**HARDING ESE MONITORING WELL DEVELOPMENT LOGS**

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP**

Job Number: **52985**

Date: **8-24-99**

Well I.D.: **P2-99-01A**

Activity Time: Start: **13:15** End: **15:00**

Date of Well Installation:

Well Depth (TOR):  ft.

Screen Length:  ft.

Protective Casing Stickup (from ground):  ft.

Protective Casing/Riser Difference:  ft.

## Pre-Development

Depth To Water (TOR):  ft.

Depth to Sediment:  ft.

Post-Development Depth to Water (TOR):  ft.

Depth to Sediment:  ft.

Height of Water Column:  ft. X  $\begin{matrix} 0.16 \text{ gal/ft (2 inch)} = \\ 0.65 \text{ gal/ft (4 inch)} \\ 1.50 \text{ gal/ft (8 inch)} \end{matrix}$   Gallons/Volume  Total Gallons Purged

## Purge Data

Time: **14:34** **15:00**

Purge Volume, Gallons	<b>~ 30</b>				
Temp, Degrees Celsius	<b>24.3</b>				
pH, units	<b>6.4</b>				
Specific Conductivity, ms	<b>1.9</b>				
Turbidity, ntu	<b>0</b>				

### Sample Observations

- ☐ Clear ☐ Colored ☐ Cloudy ☐ Turbid ☐ Odor

## Equipment Documentation

Type of Pump:

Surge Technique:

Size/Capacity of Pump:

Pumping Rate:  gal/min

Estimated Recharge Rate:  ft/min

## Notes:

*Steady Reading of 67 to 80 PID during development  
PERFORMED BY M. Lounsbury*

Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP**

Job Number: **52985**

Date: **8-24-99**

Well I.D.: **P2-99-013**

Activity Time: Start: **9:15** End: **11:16**

Date of Well Installation:

Well Depth (TOR): **34.3** ft.

Screen Length:  ft.

Protective Casing Stickup (from ground):  ft.

Protective Casing/Riser Difference:  ft.

## Pre-Development

Depth To Water (TOR): **5.47** ft.

Depth to Sediment:  ft.

Post-Development Depth to Water (TOR):  ft.

Depth to Sediment:  ft.

Height of Water Column: **28.83** ft.

X  $\begin{matrix} 0.16 \text{ gal/ft (2 inch)} = \\ 0.65 \text{ gal/ft (4 inch)} \\ 1.50 \text{ gal/ft (8 inch)} \end{matrix}$

**4.6** Gallons/Volume

Total Gallons Purged

## Purge Data

TIME: **9:28** **10:07** **10:23** **11:16** **11:30**

Purge Volume, Gallons						
Temp, Degrees Celsius	<b>22.6</b>	<b>22.3</b>	<b>22.3</b>	<b>22.3</b>		
pH, units	<b>6.5</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>		
Specific Conductivity, ms	<b>1.5</b>	<b>3.5</b>	<b>3.6</b>	<b>3.6</b>		
Turbidity, ntu	<b>170</b>	<b>85</b>	<b>12</b>	<b>2</b>		

## Sample Observations

- ☐ Clear \_\_\_\_\_
- ☐ Colored \_\_\_\_\_
- ☐ Cloudy \_\_\_\_\_
- ☐ Turbid \_\_\_\_\_
- ☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump:

Surge Technique:

Size/Capacity of Pump:

Pumping Rate:  gal/min

Estimated Recharge Rate:  ft/min

## Notes:

*PERFORMED BY M. LOUNSBURY*

Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP**

Job Number: **52985**

Date: **8-24-99**

Well I.D.: **P2-99-01C**

Activity Time: Start: **15:05** End: **18:30**

Date of Well Installation:

Well Depth (TOR):  ft.

Screen Length:  ft.

Protective Casing Stickup (from ground):  ft.

Protective Casing/Riser Difference:  ft.

## Pre-Development

Depth To Water (TOR):  ft.

Depth to Sediment:  ft.

Post-Development Depth to Water (TOR):  ft.

Depth to Sediment:  ft.

Height of Water Column:  ft. X  $\begin{matrix} 0.16 \text{ gal/ft (2 inch)} = \\ 0.65 \text{ gal/ft (4 inch)} \\ 1.50 \text{ gal/ft (8 inch)} \end{matrix}$   Gallons/Volume  Total Gallons Purged

## Purge Data

TIME: **15:05** **15:10** **18:30**

Purge Volume, Gallons			<b>~50 GAL.</b>			
Temp, Degrees Celsius						
pH, units						
Specific Conductivity, ms						
Turbidity, ntu						

Sample Observations

- ☐ Clear ☐ Colored ☐ Cloudy ☐ Turbid ☐ Odor
- PID=0.1 PID=35.5 PID=64**

## Equipment Documentation

Type of Pump:

Surge Technique:

Size/Capacity of Pump:

Pumping Rate:  gal/min

Estimated Recharge Rate:  ft/min

## Notes:

**PERFORMED BY M. LAWSON**

Signature: \_\_\_\_\_

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT STRATFORD A.E.P. JOB NUMBER 47254 DATE 10-12-99

WELL ID MW 99-09A (shallow) ACTIVITY TIME START 10:27 END 11:30

DATE OF WELL INSTALLATION 9-26-99

WELL DEPTH (TOR) 11.59 FT SCREEN LENGTH 5 FT PROTECTIVE CASING STICKUP (FROM GROUND)      FT PROTECTIVE CASING / RISER DIFFERENCE      FT

PRE-DEVELOPMENT DEPTH TO WATER (TOR) 4.22 FT POST-DEVELOPMENT DEPTH TO WATER (TOR)      FT

PRE-DEVELOPMENT DEPTH TO SEDIMENT 11.59 FT POST-DEVELOPMENT DEPTH TO SEDIMENT      FT

HEIGHT OF WATER COLUMN 5.37 FT X 0.16 GAL/FT (2 IN.) = ~ 0.9 GALLONS / VOLUME

0.65 GAL/FT (4 IN.) = ~ 75 TOTAL GALLONS PURGED

1.5 GAL/FT (6 IN.)

## PURGE DATA

PURGE VOLUME, gallons	~65	~68	~71	~75		
TEMP, degrees celcius	19.7	19.5	19.4	19.4		
pH, units	7.5	7.48	7.49	7.49		
SPECIFIC CONDUCTIVITY, $\frac{mS}{cm}$	24.5	24.7	24.6	24.7		
TURBIDITY, ntu	153	57	35	15		

## SAMPLE OBSERVATIONS

☐ CLEAR

☐ COLORED

☒ CLOUDY very slightly

☒ TURBID very slightly - collected sample for record

☐ ODOR

## EQUIPMENT DOCUMENTATION

TYPE OF PUMP DRILLER-SUPPLIED GRUNDFOS SURGE TECHNIQUE w/ pump

SIZE / CAPACITY OF PUMP 2" SUBMERSIBLE

PUMPING RATE      GAL/MIN ESTIMATED RECHARGE RATE      FT/MIN

## NOTES:

Very dirty well at first but cleared up nicely -  
Had old fuel odor to it, w/ shear on development water

SIGNATURE: John D. Zyga

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT STRATFORD AEP JOB NUMBER 47254 DATE 10-12-99  
WELL ID MW-99-09B (Deep) ACTIVITY TIME START 08:50 END 10:20  
DATE OF WELL INSTALLATION 9-26-99

WELL DEPTH (TOR) 56.74 FT SCREEN LENGTH 10 FT PROTECTIVE CASING STICKUP (FROM GROUND)          FT PROTECTIVE CASING / RISER DIFFERENCE          FT

## PRE-DEVELOPMENT

DEPTH TO WATER (TOR) 7.07 FT DEPTH TO SEDIMENT 56.74 FT POST-DEVELOPMENT DEPTH TO WATER (TOR)          FT DEPTH TO SEDIMENT          FT

## HEIGHT OF WATER

COLUMN 49.67 FT X 0.16 GAL/FT (2 IN.) = 7.9 GALLONS / VOLUME  
0.65 GAL/FT (4 IN.) ~138 TOTAL GALLONS PURGED  
1.5 GAL/FT (6 IN.)

## PURGE DATA

PURGE VOLUME, gallons	<u>~60</u>	<u>~80</u>	<u>~100</u>	<u>~123</u>	<u>~138</u>	
TEMP, degrees celcius	<u>13.6</u>	<u>13.5</u>	<u>13.4</u>	<u>13.8</u>	<u>13.7</u>	
pH, units	<u>6.05</u>	<u>6.24</u>	<u>6.43</u>	<u>6.50</u>	<u>6.38</u>	
SPECIFIC CONDUCTIVITY, $\frac{mS}{cm}$	<u>12.2</u>	<u>12.3</u>	<u>12.3</u>	<u>12.4</u>	<u>12.3</u>	
TURBIDITY, ntu	<u>358</u>	<u>169</u>	<u>35</u>	<u>14</u>	<u>24</u>	
Salinity ‰	<u>0.69</u>	<u>0.69</u>	<u>0.69</u>	<u>0.68</u>	<u>0.69</u>	

## SAMPLE OBSERVATIONS

☐ CLEAR  
☐ COLORED  
☐ CLOUDY  
☒ TURBID Very slightly turbid - collected sample for record  
☐ ODOR

## EQUIPMENT DOCUMENTATION

TYPE OF PUMP DRILLER-SUPPLIED GRINDFOS SURGE TECHNIQUE w/ Pump  
SIZE / CAPACITY OF PUMP 2" SUBMERSIBLE  
PUMPING RATE ~1.5 GAL/MIN ESTIMATED RECHARGE RATE          FT/MIN

## NOTES:

SIGNATURE:

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT STRATFORD AEP JOB NUMBER 47254 DATE 10-11-99  
WELL ID MW-99-14A (Stratford) ACTIVITY TIME START 13:33 END 14:20  
10-23-99 MWCD-99-02A  
DATE OF WELL INSTALLATION 9-28-99

WELL DEPTH (TOR) 11.88 FT SCREEN LENGTH 5 FT PROTECTIVE CASING STICKUP (FROM GROUND)          FT PROTECTIVE CASING / RISER DIFFERENCE          FT

## PRE-DEVELOPMENT

DEPTH TO WATER (TOR) 6.92 FT DEPTH TO SEDIMENT 11.88 FT

## POST-DEVELOPMENT

DEPTH TO WATER (TOR)          FT DEPTH TO SEDIMENT          FT

## HEIGHT OF WATER

COLUMN 4.96 FT X 0.16 GAL/FT (2 IN.) = 0.79 GALLONS / VOLUME  
0.65 GAL/FT (4 IN.) ~35 TOTAL GALLONS PURGED  
1.5 GAL/FT (6 IN.)

## PURGE DATA

PURGE VOLUME, gallons	~25	~30	~32	~35		
TEMP, degrees celsius	20.8°C	21.3	21.2	21.1		
pH, units	8.02	8.07	8.08	8.08		
SPECIFIC CONDUCTIVITY, $\frac{mS}{cm}$	35.0	34.9	34.8	34.5		
TURBIDITY, ntu	300	30	11	7		
Salinity (%)	2.23	2.20	2.20	2.18		

## SAMPLE OBSERVATIONS

- ☐ CLEAR  
☐ COLORED \_\_\_\_\_  
☐ CLOUDY \_\_\_\_\_  
☒ TURBID SLIGHTLY TURBID AT END - collected sample for RECORD  
☐ ODOR \_\_\_\_\_

## EQUIPMENT DOCUMENTATION

TYPE OF PUMP DRILLER-SUPPLIED GRUNDFOS SURGE TECHNIQUE W/ Pump & SURGE-Block  
SIZE / CAPACITY OF PUMP 2" SUBMERSIBLE  
PUMPING RATE ~1.3 Liters/min/GAL/MIN ESTIMATED RECHARGE RATE          FT/MIN

NOTES: CLEARED up Nicely  
NO ODORS

SIGNATURE: Thomas D. Zuply

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT STRATFORD AEP JOB NUMBER 47254 DATE 10-11-99  
WELL ID MW-99-14B (deep) ACTIVITY TIME START 14:51 END 16:00  
10/12/99 MWCD-99-02B  
DATE OF WELL INSTALLATION 9-28-99

WELL DEPTH (TOR) 59.2 FT SCREEN LENGTH 10 FT PROTECTIVE CASING STICKUP (FROM GROUND)          FT PROTECTIVE CASING / RISER DIFFERENCE          FT

## PRE-DEVELOPMENT

DEPTH TO WATER (TOR) 5.0 FT DEPTH TO SEDIMENT 59.2 FT POST-DEVELOPMENT DEPTH TO WATER (TOR)          FT DEPTH TO SEDIMENT          FT

## HEIGHT OF WATER

COLUMN 54.2 FT X 0.16 GAL/FT (2 IN.) = ~8.7 GALLONS / VOLUME  
0.65 GAL/FT (4 IN.) = ~260 TOTAL GALLONS PURGED  
1.5 GAL/FT (6 IN.)

## PURGE DATA

PURGE VOLUME, gallons	<u>~250</u>	<u>~255</u>	<u>~260</u>			
TEMP, degrees celcius	<u>14</u>	<u>14</u>	<u>14</u>			
pH, units	<u>6.73</u>	<u>6.72</u>	<u>6.71</u>			
SPECIFIC CONDUCTIVITY, $\frac{\mu\text{mhos}}{\text{cm}}$	<u>9.6</u>	<u>8.1</u>	<u>8.1</u>			
TURBIDITY, ntu	<u>29</u>	<u>23</u>	<u>26</u>			
<u>SALINITY (%)</u>	<u>0.53</u>	<u>0.43</u>	<u>0.43</u>			

## SAMPLE OBSERVATIONS

- ☐ CLEAR  
☐ COLORED  
☐ CLOUDY  
☒ TURBID Very slightly turbid at end - collected sample for record  
☐ ODOR

## EQUIPMENT DOCUMENTATION

TYPE OF PUMP DRILLER-SUPPLIED GRINDFOS SURGE TECHNIQUE W/ Pump  
SIZE / CAPACITY OF PUMP 2" SUBMERSIBLE  
PUMPING RATE ~0.5 GAL/MIN ESTIMATED RECHARGE RATE          FT/MIN

## NOTES:

SIGNATURE: John D. Fry

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT STRATFORD AEP JOB NUMBER 47254 DATE 8-26-99

WELL ID PZ-99-02A ACTIVITY TIME START 7 END 7

DATE OF WELL INSTALLATION 8-18-99 *on 8-19-99 - pumped ~50 GALS. Finish on 8-26-99*

WELL DEPTH (TOR) 10.66 FT SCREEN LENGTH 5 FT PROTECTIVE CASING STICKUP (FROM GROUND) FLUSH FT PROTECTIVE CASING / RISER DIFFERENCE        FT

PRE-DEVELOPMENT DEPTH TO WATER (TOR) 5.01 FT DEPTH TO SEDIMENT        FT POST-DEVELOPMENT DEPTH TO WATER (TOR) 5.01 FT DEPTH TO SEDIMENT 10.66 FT

HEIGHT OF WATER COLUMN 5.65 FT X 0.04 gal/ft = 0.226 GALLONS / VOLUME

0.16 GAL/FT (2 IN.) = ~62 TOTAL GALLONS PURGED

0.65 GAL/FT (4 IN.)

1.5 GAL/FT (6 IN.)

## PURGE DATA

	8-19-99	8-26-99	8-26-99	8-26-99	8-26-99	
PURGE VOLUME, gallons	~50	~58	~59	~60	~62	
TEMP, degrees celcius °C	23.2	23.2	23.3	23.2	23.1	
pH, units	6.29	6.29	6.33	6.34	6.35	
SPECIFIC CONDUCTIVITY, $\mu\text{mhos/cm}$	2.4	2.4	2.3	2.26	2.29	
TURBIDITY, ntu	13	13	5	-10 ①	-4 ①	
Redox mV	-	-	-	215	215	

## SAMPLE OBSERVATIONS

☐ CLEAR

☒ COLORED YELLOW- Chromium STAINED

☐ CLOUDY

☐ TURBID

☐ ODOR

① NTU - not functioning

## EQUIPMENT DOCUMENTATION

TYPE OF PUMP PERISTALTIC SURGE TECHNIQUE SURGE pump TUBING w/ SURGE BLOCK

SIZE / CAPACITY OF PUMP       

PUMPING RATE ± 0.2 GAL/MIN ESTIMATED RECHARGE RATE        FT/MIN

## NOTES:

SIGNATURE: Jh. G. Zyl

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT STRATFORD AEP JOB NUMBER 47254 DATE 8-19-99  
WELL ID PZ-99-02B ACTIVITY TIME START 0830 END 1400  
DATE OF WELL INSTALLATION 8-18-99

WELL DEPTH (TOR) 34.56 FT SCREEN LENGTH 5 FT PROTECTIVE CASING STICKUP (FROM GROUND) Flush Mt PROTECTIVE CASING / RISER DIFFERENCE FT

## PRE-DEVELOPMENT

DEPTH TO WATER (TOR) 4.96 FT DEPTH TO SEDIMENT 34.21 FT POST-DEVELOPMENT DEPTH TO WATER (TOR) 5.04 FT DEPTH TO SEDIMENT 34.56 FT

HEIGHT OF WATER COLUMN FT X 0.04 gal/ft (1 in.) = 1.17 GALLONS / VOLUME  
0.16 GAL/FT (2 IN.) = 64.5 TOTAL GALLONS PURGED  
0.65 GAL/FT (4 IN.)  
1.5 GAL/FT (6 IN.)

## PURGE DATA

PURGE VOLUME, gallons	12.5	24.0	37.5	50.0	64.5	
TEMP, degrees celcius	21.8	21.8	21.6	21.5	21.1	
pH, units	5.99	6.02	6.04	6.04	6.03	
SPECIFIC CONDUCTIVITY, <sup>ms</sup> umhos/cm	3.64	4.33	4.53	4.63	4.70	
TURBIDITY, ntu	—	497	694	>1000	>1000	
Redox	256	196	207	218	236	

## SAMPLE OBSERVATIONS

☐ CLEAR  
☒ COLORED Dark yellow  
☐ CLOUDY  
☐ TURBID  
☐ ODOR

## EQUIPMENT DOCUMENTATION

TYPE OF PUMP peristaltic SURGE TECHNIQUE surge pump tubing w/surge block  
SIZE / CAPACITY OF PUMP  
PUMPING RATE ± 0.2 GAL/MIN ESTIMATED RECHARGE RATE FT/MIN

## NOTES:

SIGNATURE: David O. Long

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT

STRATFORD AEP

JOB NUMBER

47254

DATE

8-26-99

WELL ID

P2-99-02C

ACTIVITY TIME

START 11:40

END

16:15

DATE OF WELL INSTALLATION

8-18-99

WELL

DEPTH (TOR)

49.6 FT

SCREEN

LENGTH

5 FT

PROTECTIVE CASING

STICKUP (FROM

GROUND) FLUSH FT

PROTECTIVE

CASING / RISER

DIFFERENCE

FT

## PRE-DEVELOPMENT

DEPTH TO

WATER (TOR)

FT

DEPTH TO

SEDIMENT

FT

## POST-DEVELOPMENT

DEPTH TO

WATER (TOR)

FT

DEPTH TO

SEDIMENT

FT

HEIGHT OF WATER

COLUMN

FT

X 0.16 GAL/FT (2 IN.) =

GALLONS / VOLUME

0.65 GAL/FT (4 IN.)

TOTAL GALLONS PURGED

1.5 GAL/FT (6 IN.)

## PURGE DATA

Purged well from 11:40 to 16:15 @ ~ 0.2 gal/min. ~ 270 min. x 0.2 = 54 gals.

	TIME 14:45	15:05	15:45	16:00	16:15	
PURGE VOLUME, gallons	~36	~50	~60	~65	~68	
TEMP, degrees celcius	19.7	19.8	19.5	19.5	19.6	
pH, units	6.37	6.35	6.32	6.33	6.32	
SPECIFIC CONDUCTIVITY, <sup>ms</sup> umhos/cm	9.6	9.7	9.9	9.9	9.9	
TURBIDITY, ntu	1	2	2	0	1	
mV	224	280	347	321	315	

## SAMPLE OBSERVATIONS

☐ CLEAR☒ COLORED

yellow

☐ CLOUDY☐ TURBID☐ ODOR

## EQUIPMENT DOCUMENTATION

TYPE OF

PUMP

peristaltic

SURGE TECHNIQUE

Surge pump tubing  
w/ surge block

SIZE / CAPACITY OF PUMP

PUMPING RATE

± 0.2

GAL/MIN

ESTIMATED RECHARGE

RATE

FT/MIN

NOTES:

SIGNATURE:

John D. Trufy

## FIELD DATA RECORD - WELL DEVELOPMENT

PROJECT STRATFORD AEPJOB NUMBER 47254DATE 8-18-98WELL ID PZ-99-03ACTIVITY TIME START 0920 END 1505DATE OF WELL INSTALLATION 8-17-99

WELL

SCREEN

PROTECTIVE CASING

PROTECTIVE

DEPTH (TOR) 8.83 FTLENGTH 5.0 FT

STICKUP (FROM

CASING / RISER

GROUND) Flush MtDIFFERENCE        FT

## PRE-DEVELOPMENT

## POST-DEVELOPMENT

DEPTH TO

DEPTH TO

DEPTH TO

DEPTH TO

WATER (TOR) 4.82 FTSEDIMENT — FTWATER (TOR) 4.91 FTSEDIMENT — FT

HEIGHT OF WATER

COLUMN

4.01 FT0.041 gal/H (1 in)

X 0.16 GAL/FT (2 IN.) =

0.16

GALLONS / VOLUME

0.65 GAL/FT (4 IN.)

7.75

TOTAL GALLONS PURGED

1.5 GAL/FT (6 IN.)

## PURGE DATA

PURGE VOLUME, gallons	<u>50</u>	<u>54</u>	<u>58</u>	<u>62</u>	<u>66</u>	<u>70</u>	<u>74</u>	<u>77.5</u>
TEMP, degrees celcius	<u>27.6</u>	<u>26.9</u>	<u>27.2</u>	<u>27.2</u>	<u>27.1</u>	<u>26.9</u>	<u>27.0</u>	<u>27.1</u>
pH, units	<u>6.07</u>	<u>6.10</u>	<u>6.08</u>	<u>6.07</u>	<u>6.06</u>	<u>6.06</u>	<u>6.05</u>	<u>6.04</u>
SPECIFIC CONDUCTIVITY, $\frac{ms}{cm}$	<u>1.34</u>	<u>1.10</u>	<u>1.04</u>	<u>1.06</u>	<u>1.06</u>	<u>1.04</u>	<u>1.04</u>	<u>1.05</u>
TURBIDITY, ntu	<u>335</u>	<u>81.3</u>	<u>50.1</u>	<u>66.0</u>	<u>35.9</u>	<u>25.5</u>	<u>20.9</u>	<u>1.1</u>
ORP	<u>—</u>	<u>-194</u>	<u>-295</u>	<u>-303</u>	<u>-297</u>	<u>-288</u>	<u>-282</u>	<u>-287</u>

## SAMPLE OBSERVATIONS

- ☒ CLEAR  
☐ COLORED \_\_\_\_\_  
☐ CLOUDY \_\_\_\_\_  
☐ TURBID \_\_\_\_\_  
☐ ODOR \_\_\_\_\_

## EQUIPMENT DOCUMENTATION

TYPE OF

PUMP

Peristaltic

SURGE TECHNIQUE

Surge tubing through entire screen length

SIZE / CAPACITY OF PUMP

PUMPING RATE

0.25

GAL/MIN

ESTIMATED RECHARGE

RATE

FT/MIN

NOTES:

56 gallons removed to allow for water used during installationSIGNATURE: David O. Longo

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-20-01	Project No. 52985
Client: SAEP	Well Development Date: 12/13/01	Logged by: MHC
Well/Site I.D.: H ESE -01-05 D	Weather: MA - Inside Building	Start Date: 12/13/01
		Finish Date:

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 1400	Finish Time:
Bottom of Screen	168 ft.	From Ground Surface <input checked="" type="checkbox"/> From Top of Riser <input type="checkbox"/>		
Sediment Sump/Plug	0 ft.			
Screen Length	10 ft.			
		Fluids Lost during Drilling	gal.	

Protective Casing Stick-up	Flush ft.	Protective Casing/Well Diff.	0.7 ft.	PID Readings:	Ambient Air 0 ppm
					Well Mouth 5.4 ppm

Well Levels:		Sediment:	
Initial	4.13 ft.	Well Depth before Development	167.32 ft. (from top of PVC)
End of Development	5.17 ft.	Well Depth after Development	166.03 ft.
24 Hours after Development	ft.	Sediment Depth Removed	+ 0.70 ft.
HT of Water Column	164.2 ft.	<input checked="" type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) = 26.2 gal./vol. <input type="checkbox"/> 1.5 GAL/FT (6 IN.)	

Equipment:	Approximate Recharge Rate
<input checked="" type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> _____ <input type="checkbox"/> Grundfos Pump 2" _____ 4" _____	2 gpm
Total Gallons Removed	
gal.	

Well Development Criteria Met:	
Notes: Turbidity Very High - will clean out well with whale pump at a later date 12/15/01 Pumped ~30 gal. with whale pump. Final NTU 100. (See 11/12/01 Log book for Details)	<div style="text-align: right;">12/13/01</div> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Well water clear to unaided eye  <input type="checkbox"/> Sediment thickness remaining in well is &lt;1.0% of screen length  <input type="checkbox"/> Turbidity &lt; 5NTUs  <input checked="" type="checkbox"/> ±10% change in field parameters         </div> <div>           Yes No  <input type="checkbox"/> <input checked="" type="checkbox"/>  <input type="checkbox"/> <input checked="" type="checkbox"/>  <input type="checkbox"/> <input checked="" type="checkbox"/>  <input checked="" type="checkbox"/> <input type="checkbox"/> </div> </div>
End of Well Development Sample (1 pint) Collected?	Yes No <input type="checkbox"/> <input type="checkbox"/>

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1409	5	5	4.36	20.7	236	7100	2 GPM
1422	50	55	5.64	17.2	29.1	879	↓
1435	30	85	5.82	16.8	29.4	7100	
1448	35	120	5.86	16.8	29.5	7100	
1500	30	150	5.86	16.7	29.5	695	
1512	105	200	5.86	16.9	29.6	850	
1523	25	200	5.85	16.9	29.5	900	

Well Developer's Signature \_\_\_\_\_

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-17-01	Project No. 52985
Client: SAEP	Well Development Date: 12/5/01	Logged by: MHL
Well/Site I.D.: HESE-01-06I	Weather: Sunny, 60°	Start Date: 12/5/01
		Finish Date: 12/5/01

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 750	Finish Time: 930
Bottom of Screen				
Sediment Sump/Plug				
Screen Length				
		Fluids Lost during Drilling		

Protective Casing Stick-up: Flush ft.	Protective Casing/Well Diff: -0.53 ft.	PID Readings:
		Ambient Air 0 ppm
		Well Mouth 84 ppm

Well Levels:		Sediment:	
Initial	5.33 ft.	Well Depth before Development	29.13 ft. (from top of PVC)
End of Development	5.32 ft.	Well Depth after Development	29.43 ft.
24 Hours after Development	5.32 ft.	Sediment Depth Removed	0.30 ft.
HT of Water Column	24 ft.	<input checked="" type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) <input type="checkbox"/> 1.5 GAL/FT (6 IN.)	3.8 gal./vol.

Equipment:	Approximate Recharge Rate
<input checked="" type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> _____ <input type="checkbox"/> Grundfos Pump 2" _____ 4" _____	1 gpm
	Total Gallons Removed
	85 gal.

Well Development Criteria Met:	
Notes: Good recharge - PTO Headspace - 101-205 PPM	
	<input checked="" type="checkbox"/> Well water clear to unaided eye <input checked="" type="checkbox"/> Sediment thickness remaining in well is <1.0% of screen length <input type="checkbox"/> Turbidity < 5NTUs <input checked="" type="checkbox"/> ±10% change in field parameters
End of Well Development Sample (1 pint) Collected?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
810	1	2	5.75	21.4	1.81	over range	1 GPM
820	2	10	6.00	22.3	.605	546	1
832	3	20	6.00	22.3	.911	279	1
850	4	40	6.18	22.1	2.08	126	1
900	5	55	6.29	22.0	1.53	138	1
912	6	70	6.25	21.9	2.01	28.5	1

Well Developer's Signature: Murphy Jones

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-30-01	Project No. 52985
Client: SAEP	Well Development Date: 12/5/01	Logged by: MHL
Well/Site I.D.: HESB-01-60	Weather: Sunny, 60°	Start Date: 12/5/01
		Finish Date: 12/5/01

## Well Construction Record Data:

Bottom of Screen

Sediment Sump/Plug

Screen Length

Well Diameter

2 in.

Start Time: 815

Finish Time: 930

From Ground Surface ☐ From Top of Riser ☐

Fluids Lost during Drilling

gal.

Protective Casing Stick-up

Flusht ft.

Protective Casing/Well Diff.

-0.40 ft.

PID Readings:

Ambient Air 0 ppm

Well Mouth 4.0 ppm

## Well Levels:

Initial

5.64 ft.

End of Development

5.56 ft.

24 Hours after Development

5.45 ft.

HT of Water Column

146 ft.

## Sediment:

Well Depth before Development

151.08 ft.

(from top of PVC)

Well Depth after Development

151.94 ft.

Sediment Depth Removed

0.86 ft.

☒ 0.16 GAL/FT (2 IN.)

☐ 0.65 GAL/PI (4 IN.)

☐ 1.5 GAL/FT (6 IN.)

x

=

23.4

gal./vol.

## Equipment:

☒ Dedicated Submersible Pump

☐ Surge Block

☐ Bailer ☐ 2" ☐ \_\_\_\_\_

☐ Grundfos Pump 2" \_\_\_\_\_ 4" \_\_\_\_\_

Approximate Recharge Rate

3 gpm

Total Gallons Removed

280 gal.

## Well Development Criteria Met:

Notes:

Good recharge PID-0 Headspace  
Purged with wacker pump then switched  
over to whale pump to clean out  
bottom of well.

☒ Well water clear to unaided eye

☒ Sediment thickness remaining in well is <1.0% of screen length

☒ Turbidity < 5 NTUs

☒ ±10% change in field parameters

Yes No

☐ ☒

☒ ☐

☐ ☒

☒ ☐

End of Well Development Sample (1 pint) Collected?

Yes No  
☐ ☒

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
841	5	5	6.25	18.8	28.8	average	3 gpm
852	50	50	6.60	18.0	29.6	293	2 gpm
903	65	65	6.66	17.9	29.7	108	2
916	105	105	6.68	18.0	29.1	105	2
926	140	140	6.81	17.7	30.0	96.0	2

Well Developer's Signature

*M. H. Jones*

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-18-01	Project No. 52985
Client: SAEP	Well Development Date: 12/5/01	Logged by: MGL
Well/Site I.D.: HFE-01-07E	Weather: Sunny, 60°	Start Date: 12/5/01
Well Construction Record Data:	Well Diameter: 2 in.	Finish Date: 12/5/01
Bottom of Screen	] From Ground Surface <input type="checkbox"/> From Top of Riser <input type="checkbox"/>	Start Time: 1255
Sediment Sump/Plug		Finish Time: 1515
Screen Length		
Fluids Lost during Drilling		
Protective Casing Stick-up: 74.54 ft.	Protective Casing/Well Diff: -0.51 ft.	PID Readings: Ambient Air 0 ppm
		Well Mouth 9.0 ppm

Well Levels:	Sediment:
Initial: 5.58 ft.	Well Depth before Development: 29.03 ft. (from top of PVC)
End of Development: 5.59 ft.	Well Depth after Development: 29.33 ft.
24 Hours after Development: 5.55 ft.	Sediment Depth Removed: 0.30 ft.
HT of Water Column: 24 ft.	<input type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) = 4 gal./vol. <input type="checkbox"/> 1.5 GAL/FT (6 IN.)

Equipment:	Approximate Recharge Rate:
<input checked="" type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> Grundfos Pump 2" <input type="checkbox"/> 4"	1 gpm
Total Gallons Removed:	110 gal.

## Well Development Criteria Met:

Notes: Very turbid - Good recharge  
 PDS - 524 - 667 ppm ~ Very Low  
 PH -

	Yes	No
Well water clear to unaided eye	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sediment thickness remaining in well is <1.0% of screen length	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Turbidity < 5 NTUs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
±10% change in field parameters	<input checked="" type="checkbox"/>	<input type="checkbox"/>

End of Well Development Sample (1 pint) Collected? ☐ Yes ☒ No

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1312	1	2	6.64	22.4	2.64	over range	1 GPM
1323	2	10	5.45	22.4	3.50	over range	1
1335	3	18	6.02	22.3	4.47	over range	1
1348	4	30	4.74	22.5	3.73	183	1
1422	5	50	4.69	22.2	3.22	525	1
1435	6	65	4.57	22.3	3.56	370	1
1445	7	80	4.78	22.2	2.52	153	
1500	8	95	4.48	22.6	3.02	4.42	

Well Developer's Signature: *M. J. J.*

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-26-01	Project No. 52985
Client: SAEP	Well Development Date: 12/5/01	Logged by: mbc
Well/Site I.D.: HESE-01-07D	Weather: 12/5/01	Start Date: 12/5/01
		Finish Date: 12/5/01

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 1300	Finish Time: 1443
Bottom of Screen		From Ground Surface <input type="checkbox"/> From Top of Riser <input type="checkbox"/>		
Sediment Sump/Plug				
Screen Length				
		Fluids Lost during Drilling		

Protective Casing Stick-up: Flush ft.	Protective Casing/Well Diff: -0.42 ft.	PID Readings:
		Ambient Air: 0 ppm
		Well Mouth: 0.3 ppm

Well Levels:		Sediment:	
Initial	4.84 ft.	Well Depth before Development	128.35 ft. (from top of PVC)
End of Development	5.36 ft.	Well Depth after Development	128.57 ft.
24 Hours after Development	5.27 ft.	Sediment Depth Removed	0.22 ft.
HT of Water Column	124 ft.	<input type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) = 20 gal./vol. <input type="checkbox"/> 1.5 GAL/FT (6 IN.)	

Equipment:	Approximate Recharge Rate
<input type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> _____ <input type="checkbox"/> Grundfos Pump 2" _____ 4" _____	1 gpm
	Total Gallons Removed
	150 gal.

Well Development Criteria Met:

Notes: slower recharge than other deep wells  
 ~1 GPM. PID Headspace - 1.2 - 4.2 ppm

	Yes	No
Well water clear to unaided eye	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sediment thickness remaining in well is <1.0% of screen length	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Turbidity < 5 NTUs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
±10% change in field parameters	<input checked="" type="checkbox"/>	<input type="checkbox"/>

End of Well Development Sample (1 pint) Collected? ☐ Yes ☒ No

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1320	1	1	6.59	20.0	16.1	Overrange	1 GPM
1330	2	15	6.34	19.5	25.9	Overrange	1
1342	3	30	6.51	19.2	26.2	340	1
1354	4	45	6.34	19.4	26.5	250	1
1408	5	65	6.72	19.0	27.8	396	1
1424	6	75	6.37	19.1	27.8	185	1
1443	7	110	6.41	19.0	27.2	190	

Well Developer's Signature: Michael H. Jorgensen

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 12-05-01	Project No. 52985
Client: SAEP	Well Development Date: 12/7/01	Logged by: MHL
Well/Site I.D.: HES-01-8D	Weather: Cloudy, 50°	Start Date: 12/7/01
		Finish Date: 12/7/01

## Well Construction Record Data:

Bottom of Screen

Sediment Sump/Plug

Screen Length

Well Diameter

2 in.

Start Time: 705

Finish Time: 930

From Ground Surface ☐ From Top of Riser ☐

Fluids Lost during Drilling

gal.

Protective Casing Stick-up

Flux ft.

Protective Casing/Well Diff.

— ft.

PID Readings:

Ambient Air 0 ppm

Well Mouth 0 ppm

## Well Levels:

Initial

6.43 ft.

End of Development

5.28 ft.

24 Hours after Development

— ft.

HT of Water Column

117 ft.

## Sediment:

Well Depth before Development

122.45 ft.

(from top of PVC)

Well Depth after Development

122.51 ft.

Sediment Depth Removed

0.06 ft.

x 0.16 GAL/FT (2 IN.)

☐ 0.65 GAL/PI (4 IN.)

☐ 1.5 GAL/FT (6 IN.)

=

≈ 19

gal./vol.

## Equipment:

☒ Dedicated Submersible Pump

☐ Surge Block

☐ Bailer ☐ 2" ☐ 4"

☐ Grundfos Pump 2" ☐ 4"

Approximate Recharge Rate

1 gpm

Total Gallons Removed

150 gal.

## Well Development Criteria Met:

Notes: Good recharge - PID - 0 - 17.5 ppm  
Purged with water pump then switched to whale pump to clean out the bottom of the well

- Well water clear to unaided eye ☐ ☒
- Sediment thickness remaining in well is <1.0% of screen length ☒ ☐
- Turbidity < 5 NTUs ☐ ☒
- ±10% change in field parameters ☒ ☐

Yes No

☐ ☒

☒ ☐

☐ ☒

☒ ☐

End of Well Development Sample (1 pint) Collected?

Yes No  
☐ ☒

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
727	1	10	5.55	18.0	131	151	1.0 gpm
737	2	25	6.34	17.1	24.8	overrange	1
753	3	55	6.51	16.8	26.6	overrange	1
807	4	85	6.57	16.7	27.1	772	1
821	5	100	6.53	16.7	27.4	610	1
832	6	110	6.62	15.3	27.2	544	1
911	7	150	—	—	—	16.4	—

Well Developer's Signature

M. H. L.

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-29-01	Project No. 52985
Client: SAEP	Well Development Date: 12/5/01	Logged by: MHL
Well/Site I.D.: HESE-01-09D	Weather: Sunny, 60°	Start Date: 12/5/01
		Finish Date: 12/5/01

## Well Construction Record Data:

Bottom of Screen

Sediment Sump/Plug

Screen Length

Well Diameter

2 in.

Start Time: 1535

Finish Time: 1645

From Ground Surface ☐ From Top of Riser ☐

Fluids Lost during Drilling

gal.

Protective Casing Stick-up

Plus/ft

Protective Casing/Well Diff.

ft.

PID Readings:

Ambient Air

ppm

Well Mouth

ppm

## Well Levels:

Initial

4.93 ft.

End of Development

5.58 ft.

24 Hours after Development

5.57 ft.

HT of Water Column

107 ft.

## Sediment:

Well Depth before Development

107.42 ft.

(from top of PVC)

Well Depth after Development

111.87 ft.

Sediment Depth Removed

4.45 ft.

☒ 0.16 GAL/FT (2 IN.)

☐ 0.65 GAL/PI (4 IN.)

☐ 1.5 GAL/FT (6 IN.)

x

=

~17

gal./vol.

## Equipment:

☒ Dedicated Submersible Pump

☐ Surge Block

☐ Bailer ☐ 2" ☐ \_\_\_\_\_

☐ Grundfos Pump 2" \_\_\_\_\_ 4" \_\_\_\_\_

Approximate Recharge Rate

2 gpm

Total Gallons Removed

300 gal.

## Well Development Criteria Met:

Notes: Good return - Very turbid alot of sediment at bottom of well.  
PPD - 1.6-3.9

- ☒ Well water clear to unaided eye
- ☒ Sediment thickness remaining in well is <1.0% of screen length
- ☐ Turbidity < 5NTUs
- ☒ ±10% change in field parameters

Yes No

☐ ☒

☒ ☐

☐ ☒

☒ ☐

End of Well Development Sample (1 pint) Collected? ☐ Yes ☒ No

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1607	1	5	5.93	19.6	17.5	Over range	2 - GPM
1616	2	50	6.14	18.9	23.5	Over range	2
1626	3	85	6.19	18.7	23.7	559	2
1636	4	120	6.17	18.6	23.9	470	2
1642	5	150	6.21	18.4	24.0	590	2

Well Developer's Signature

M. H. Jung

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 12/18/01	Project No. 52985
Client: SAEP	Well Development Date: 12/20/01	Logged by: M. Lounsbury
Well/Site I.D.: HES-01-100	Weather: NA - Inside	Start Date: 12/20/01
		Finish Date: 12/20/01

## Well Construction Record Data:

Bottom of Screen

111.5 ft.

Sediment Sump/Plug

- ft.

Screen Length

10 ft.

Well Diameter

2 in.

Start Time:

750

Finish Time:

1145

From Ground Surface ☐ From Top of Riser ☐

Fluids Lost during Drilling

- gal.

Protective Casing Stick-up

Flush ft.

Protective Casing/Well Diff.

NA ft.

PID Readings:

Ambient Air 0 ppm

Well Mouth 1.1 ppm

## Well Levels:

Initial

5.78 ft.

End of Development

5.78 ft.

24 Hours after Development

- ft.

HT of Water Column

105 ft.

## Sediment:

Well Depth before Development

109.16 ft.

(from top of PVC)

Well Depth after Development

- ft.

Sediment Depth Removed

- ft.

x 0.16 GAL/FT (2 IN.)

x 0.65 GAL/PI (4 IN.)

x 1.5 GAL/FT (6 IN.)

=

~ 17

gal./vol.

Drillers Cut PVC after Initial Development

## Equipment:

☒ Dedicated Submersible Pump

☐ Surge Block

☐ Bailer ☐ 2" ☐ 4"

☐ Grundfos Pump 2" ☐ 4"

Approximate Recharge Rate

2 gpm

Total Gallons Removed

180 gal.

## Well Development Criteria Met:

Notes: A - Drillers Cut PVC to F.T. 1000' Day - W.L. are not consistent

- Well water clear to unaided eye ☐ ☒
- Sediment thickness remaining in well is <1.0% of screen length ☒ ☐
- Turbidity < 5 NTUs ☐ ☒
- ±10% change in field parameters ☒ ☐

Yes No

☐ ☒

☒ ☐

☐ ☒

☒ ☐

End of Well Development Sample (1 pint) Collected? ☐ Yes ☒ No

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
830	1	20	7.38	18.8	0.97	over	1.5
845	2	30	6.17	18.6	12.3	over	1
859	3	50	5.95	18.3	26.1	over	1
930	4	80	5.92	18.4	26.1	219	2
940	5	130	5.91	18.3	25.9	106	2

Purged with whole pump to clean remaining silt off Bottom of well

Well Developer's Signature \_\_\_\_\_

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-18-01	Project No. 52985
Client: SAEP	Well Development Date: 12/5/01	Logged by: MHL
Well/Site I.D.: HESE-01-12I	Weather: Sunny, 60°	Start Date: 12/5/01
		Finish Date: 12/5/01

## Well Construction Record Data:

Bottom of Screen

Sediment Sump/Plug

Screen Length

Well Diameter

2 in.

Start Time: 1009

Finish Time: 1130

From Ground Surface ☐ From Top of Riser ☐

Fluids Lost during Drilling

gal.

Protective Casing Stick-up

Flush ft.

Protective Casing/Well Diff.

0.32 ft.

PID Readings:

Ambient Air ☐ ppm

Well Mouth ☐ ppm

## Well Levels:

Initial

5.64 ft.

End of Development

5.56 ft.

24 Hours after Development

5.47 ft.

HT of Water Column

39 ft.

## Sediment:

Well Depth before Development

43.73 ft.

(from top of PVC)

Well Depth after Development

44.35 ft.

Sediment Depth Removed

0.62 ft.

☐ 0.16 GAL/FT (2 IN.)

☐ 0.65 GAL/PI (4 IN.)

☐ 1.5 GAL/FT (6 IN.)

x =

6.2

gal./vol.

## Equipment:

☒ Dedicated Submersible Pump

☐ Surge Block

☐ Bailer ☐ 2" ☐ 4"

☐ Grundfos Pump 2" ☐ 4"

Approximate Recharge Rate

1 gpm

Total Gallons Removed

80 gal.

## Well Development Criteria Met:

Notes:

Good recharge

PID-0 284-325 ppm

- ☒ Well water clear to unaided eye
- ☒ Sediment thickness remaining in well is <1.0% of screen length
- ☐ Turbidity < 5NTUs
- ☒ ±10% change in field parameters

Yes No

☒ ☐

☒ ☐

☐ ☒

☒ ☐

End of Well Development Sample (1 pint) Collected?

Yes No  
☐ ☒

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1020	1	3	5.95	21.4	6.90	Overrange	1 GPM
1031	2	15	5.68	22.3	7.11	Overrange	1
1043	3	25	5.52	21.2	8.64	367	1
1051	4	40	5.88	21.3	8.12	116	1
1106	5	55	5.75	21.2	8.22	637	1
1116	6	65	5.87	21.2	8.53	14.2	1

Well Developer's Signature

M. H. Jones

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 12-2-01	Project No. 52985
Client: SAEP	Well Development Date: 12/5/01	Logged by: MHL
Well/Site I.D.: HESE-01-12D	Weather: Sunny, 60°	Start Date: 12/5/01
		Finish Date: 12/5/01

## Well Construction Record Data:

Bottom of Screen

Sediment Sump/Plug

Screen Length

Well Diameter

2 in.

Start Time: 10/0

Finish Time: 1115

From Ground Surface ☐ From Top of Riser ☐

Fluids Lost during Drilling

gal.

Protective Casing Stick-up

Flush ft.

Protective Casing/Well Diff.

-0.38 ft.

PID Readings:

Ambient Air 0 ppm

Well Mouth 0.5 ppm

## Well Levels:

Initial

4.43 ft.

End of Development

5.31 ft.

24 Hours after Development

5.20 ft.

HT of Water Column

152 ft.

## Sediment:

Well Depth before Development

155.52 ft.

(from top of PVC)

Well Depth after Development

155.97 ft.

Sediment Depth Removed

0.45 ft.

☐ 0.16 GAL/FT (2 IN.)

☐ 0.65 GAL/PI (4 IN.)

☐ 1.5 GAL/FT (6 IN.)

x =

24.3

gal./vol.

## Equipment:

☒ Dedicated Submersible Pump

☐ Surge Block

☐ Bailer ☐ 2" ☐ \_\_\_\_\_

☐ Grundfos Pump 2" \_\_\_\_\_ 4" \_\_\_\_\_

Approximate Recharge Rate

2 gpm

Total Gallons Removed

180 gal.

## Well Development Criteria Met:

Notes: Good recharge - PID - 120 - 440 ppm

- ☒ Well water clear to unaided eye
- ☒ Sediment thickness remaining in well is <1.0% of screen length
- ☐ Turbidity < 5NTUs
- ☒ ±10% change in field parameters

Yes No

☐ ☒

☒ ☐

☐ ☒

☒ ☐

End of Well Development Sample (1 pint) Collected?

Yes No ☐ ☒

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1027	1	60	6.90	18.5	7.51	overrange	2 GPM
1039	2	50	6.57	18.1	28.7	141	2
1051	3	85	6.49	18.0	28.4	124	2
1101	4	110	6.52	17.9	28.6	329	2
1111	5	140	6.60	17.1	29.4	18.0	2

Well Developer's Signature

M. H. J.

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-15-01	Project No. 52985
Client: SAEP	Well Development Date: 12/6/01	Logged by: M4L
Well/Site I.D.: HESB-01-14I	Weather: Sunny, 60°	Start Date: 12/6/01
		Finish Date: 12/6/01

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 8:15	Finish Time: 9:45
Bottom of Screen				
Sediment Sump/Plug				
Screen Length				
		Fluids Lost during Drilling		

Protective Casing Stick-up: 11.4 ft.	Protective Casing/Well Diff: -0.32 ft.	PID Readings: Ambient Air 0 ppm
		Well Mouth 25.5 ppm

Well Levels:	Sediment:
Initial: 5.37 ft.	Well Depth before Development: 44.57 ft. (from top of PVC)
End of Development: 5.52 ft.	Well Depth after Development: 46.94 ft.
24 Hours after Development: 5.52 ft.	Sediment Depth Removed: 2.37 ft.
HT of Water Column: 42 ft.	<input checked="" type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) <input type="checkbox"/> 1.5 GAL/FT (6 IN.)
	x ~6.6 gal./vol.

Equipment:	Approximate Recharge Rate: 1 gpm
<input type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> Grundfos Pump 2" <input type="checkbox"/> 4"	Total Gallons Removed: 65 gal.

Well Development Criteria Met:	
Notes: Good recharge - PID - 147-243 ppm	
End of Well Development Sample (1 pint) Collected?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
8:47	1	2	7.23	19.5	4.98	average	1 GPM
8:59	2	10	6.70	20.0	5.78	146	1
9:10	3	20	6.52	20.0	7.86	260	1
9:22	4	35	6.48	19.9	8.66	23.5	1
9:33	5	50	6.49	20.0	8.80	1.6	1
9:44	6	55	6.48	19.9	8.97	1.1	1

Well Developer's Signature: Michael H. Jones

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 12/19/01	Project No. 52985
Client: SAEP	Well Development Date: 12/20/01	Logged by: M. Lounsbury
Well/Site I.D.: HESE-01-15I	Weather: WA - Inside	Start Date: 12/20/01
		Finish Date: 12/20/01

## Well Construction Record Data:

Bottom of Screen

35.2 ft.

Sediment Sump/Plug

- ft.

Screen Length

10 ft.

Well Diameter

2 in.

Start Time:

8:40

Finish Time:

10:00

From Ground Surface ☐ From Top of Riser ☐

Fluids Lost during Drilling

30 gal.

Protective Casing Stick-up

Flush ft.

Protective Casing/Well Diff.

- ft.

PID Readings:

Ambient Air 0 ppm

Well Mouth 21.4 ppm

## Well Levels:

Initial

5.53 ft.

End of Development

5.54 ft.

24 Hours after Development

- ft.

HT of Water Column

30 ft.

## Sediment:

Well Depth before Development

35.14 ft.

(from top of PVC)

Well Depth after Development

35.24 ft.

Sediment Depth Removed

0.10 ft.

☒ 0.16 GAL/FT (2 IN.)

☐ 0.65 GAL/PI (4 IN.)

☐ 1.5 GAL/FT (6 IN.)

x = 5 gal./vol.

## Equipment:

☒ Dedicated Submersible Pump

☐ Surge Block

☐ Bailer ☐ 2" ☐ \_\_\_\_\_

☐ Grundfos Pump 2" \_\_\_\_\_ 4" \_\_\_\_\_

Approximate Recharge Rate

1 gpm

Total Gallons Removed

80 gal.

## Well Development Criteria Met:

Notes:

Good recharge - Strong solvent odor

PID-Headspace - 7,261 ppm

no product noted -

☒ Well water clear to unaided eye

☒ Sediment thickness remaining in well is <1.0% of screen length

☐ Turbidity < 5 NTU's

☒ ±10% change in field parameters

Yes No

☒ ☐

☒ ☐

☐ ☒

☐ ☒

End of Well Development Sample (1 pint) Collected?

Yes No

☐ ☒

## Water Parameter Measurements

Record at start, twice during and at the end of development (minimum):

Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
8:50	1	10	7.13	20.6	0.505	over range	1 GPM
9:02	2	20	6.88	20.7	1.52	319	
9:12	3	30	6.50	20.9	2.33	115	
9:25	4	50	6.38	20.9	3.32	306	
9:36	5	55	6.39	20.7	4.16	95	
9:46	6	80	6.35	20.8	4.41	37	

Well Developer's Signature

*[Signature]*

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-14-01	Project No. 52985
Client: SAEP	Well Development Date: 12/4/01	Logged by: MHL
Well/Site I.D.: HESE-01-16I	Weather: Sunny, 55°	Start Date: 12/4/01
		Finish Date: 12/4/01

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 6:43	Finish Time: 1:42
Bottom of Screen				
Sediment Sump/Plug				
Screen Length				
		Fluids Lost during Drilling		

Protective Casing Stick-up: Flush ft.	Protective Casing/Well Diff.: -0.49 ft.	PID Readings:
		Ambient Air: 6 ppm
		Well Mouth: 91.9 ppm

Well Levels:	Sediment:
Initial: 5.50 ft.	Well Depth before Development: 32.71 ft. (from top of PVC)
End of Development: 5.82 ft.	Well Depth after Development: 34.59 ft.
24 Hours after Development: 5.45 ft.	Sediment Depth Removed: 1.88 ft.
HT of Water Column: 29 ft.	<input type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) <input type="checkbox"/> 1.5 GAL/FT (6 IN.)
	4.6 gal./vol.

Equipment:	Approximate Recharge Rate:
<input checked="" type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> _____ <input type="checkbox"/> Grundfos Pump 2" _____ 4" _____	1 gpm
	Total Gallons Removed: 70 gal.

Well Development Criteria Met:	
Notes: * Very strong solvent odor	
PDA Headspace - 518 to 71000 -	
Good recharge	
End of Well Development Sample (1 pint) Collected?	Yes No
	<input checked="" type="checkbox"/> <input type="checkbox"/>

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1303	1	3	6.77	17.9	2.71	Overage	1
1323	2	15	6.50	17.9	3.32	9.58	
1334	3	30	6.52	17.9	3.39	16.9	
1347	4	45	6.59	17.9	3.63	40.6	
1401	5	60	6.40 mm 6.53	17.8	3.66	17.5	
Well Developer's Signature: [Signature]							

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-13-01	Project No. 52985
Client: SAEP	Well Development Date: 12/4/01	Logged by: [Signature]
Well/Site I.D.: HESE-01-17I	Weather: Sunny, 50	Start Date: 12/4/01
		Finish Date: 12/6/01

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 1005	Finish Time: 1600
Bottom of Screen	ft.	From Ground Surface <input type="checkbox"/> From Top of Riser <input type="checkbox"/>		
Sediment Sump/Plug	ft.			
Screen Length	ft.			
		Fluids Lost during Drilling	gal.	

Protective Casing Stick-up: 11.4 ft.	Protective Casing/Well Diff.: — ft.	PID Readings:
		Ambient Air: 0 ppm
		Well Mouth: 2.6 ppm

Well Levels:		Sediment:	
Initial	3.83 ft.	Well Depth before Development	27.30 ft. (from top of PVC)
End of Development	26.25 ft.	Well Depth after Development	27.33 ft.
24 Hours after Development	— ft.	Sediment Depth Removed	0.03 ft.
HT of Water Column	23 ft.	<input type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) = 3.7 gal./vol. <input type="checkbox"/> 1.5 GAL/FT (6 IN.)	

Equipment:	Approximate Recharge Rate
<input checked="" type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> _____ <input type="checkbox"/> Grundfos Pump 2" _____ 4" _____	gpm 26 gal.
Total Gallons Removed	

Well Development Criteria Met:

Notes: Very slow recharge - well kept dry - will need to take several days to develop

	Yes	No
Well water clear to unaided eye	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sediment thickness remaining in well is <1.0% of screen length	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Turbidity < 5NTUs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
±10% change in field parameters	<input checked="" type="checkbox"/>	<input type="checkbox"/>

End of Well Development Sample (1 pint) Collected? ☐ Yes ☒ No

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1022	1	1	6.68	14.7	13.5	185	1
1047	2	10	6.69	16.5	6.90	372	1
803	3	20	6.28	16.7	13.1	146	1
1142	4	26	6.50	16.7	13.9	99.5	1

Well Developer's Signature: [Signature]

Harding ESE

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-15-01	Project No. 52985
Client: SAEP	Well Development Date: 12/4/01	Logged by: [Signature]
Well/Site I.D.: HESE-01-17D	Weather: Sunny, 55°	Start Date: 12/4/01
		Finish Date:

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 8:18	Finish Time:
Bottom of Screen	122.3 ft.	From Ground Surface <input checked="" type="checkbox"/> From Top of Riser <input type="checkbox"/>		
Sediment Sump/Plug	0 ft.			
Screen Length	10 ft.	Fluids Lost during Drilling		

Protective Casing Stick-up	Flush ft.	Protective Casing/Well Diff.	ft.	PID Readings:
				Ambient Air 0 ppm
				Well Mouth 0 ppm

Well Levels:		Sediment:	
Initial	5.12 ft.	Well Depth before Development	122.94 ft. (from top of PVC)
End of Development	3.42 ft.	Well Depth after Development	123.32 ft.
24 Hours after Development	ft.	Sediment Depth Removed	ft.
HT of Water Column	117 ft.	<input checked="" type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) <input type="checkbox"/> 1.5 GAL/FT (6 IN.)	
		x	19 gal./vol.

Equipment:	Approximate Recharge Rate
<input checked="" type="checkbox"/> Dedicated Submersible Pump	1 gpm
<input type="checkbox"/> Surge Block	
<input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> 4"	Total Gallons Removed
<input type="checkbox"/> Grundfos Pump 2" <input type="checkbox"/> 4"	gal.

Well Development Criteria Met:

Notes: Good recharge - PID Headspace = 12-14 ppm

12/05/01 Repumped with whale pump to get turbidity down. Removed ~ 30 gal.

Final NTU = 50. (See 11/12/01 log book for details)

	Yes	No
Well water clear to unaided eye	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sediment thickness remaining in well is <1.0% of screen length	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Turbidity < 5 NTUs	<input type="checkbox"/>	<input checked="" type="checkbox"/>
±10% change in field parameters	<input checked="" type="checkbox"/>	<input type="checkbox"/>

End of Well Development Sample (1 pint) Collected? ☐ Yes ☒ No

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
9:48	1	5	6.37	14.0	18.6	Over	↓
10:00	2	30	6.59	14.2	30.3	Over	
10:13	3	45	6.70	14.5	30.5	753	
10:26	4	60	6.74	14.8	30.4	452	
10:38	5	75	6.77	14.9	30.8	482	
11:01	6	110	6.75	15.4	30.7	379	
11:18	7	130	6.80	14.8	30.7	297	
Well Developer's Signature _____							

# FIELD DATA RECORD - WELL DEVELOPMENT

Project: Remedial Investigation	Well Installation Date: 11-16-01	Project No. 52985
Client: SAEP	Well Development Date: 12/4/01	Logged by: M4C
Well/Site I.D.: HESE-01-180	Weather: Sunny, 55°	Start Date: 12/4/01
		Finish Date: 12/4/01

Well Construction Record Data:		Well Diameter: 2 in.	Start Time: 1445	Finish Time: 1630
Bottom of Screen				
Sediment Sump/Plug				
Screen Length				
		Fluids Lost during Drilling		

Protective Casing Stick-up: Flush ft.	Protective Casing/Well Diff: -0.34 ft.	PID Readings:
		Ambient Air 0 ppm
		Well Mouth 0 ppm

Well Levels:	Sediment:
Initial: 5.12 ft.	Well Depth before Development: 48.61 ft. (from top of PVC)
End of Development: 4.90 ft.	Well Depth after Development: 48.86 ft.
24 Hours after Development: 4.59 ft.	Sediment Depth Removed: 0.25 ft.
HT of Water Column: 44 ft.	<input checked="" type="checkbox"/> 0.16 GAL/FT (2 IN.) <input type="checkbox"/> 0.65 GAL/PI (4 IN.) <input type="checkbox"/> 1.5 GAL/FT (6 IN.)
	x = 7 gal./vol.

Equipment:	Approximate Recharge Rate: 1 gpm
<input checked="" type="checkbox"/> Dedicated Submersible Pump <input type="checkbox"/> Surge Block <input type="checkbox"/> Bailer <input type="checkbox"/> 2" <input type="checkbox"/> 4" <input type="checkbox"/> Grundfos Pump 2" <input type="checkbox"/> 4"	Total Gallons Removed: 80 gal.

Well Development Criteria Met:	
Notes: Good recharge - Slight organic odor	
PED Hecksate - 116-164 ppm	
Purged with whole Pump	
End of Well Development Sample (1 pint) Collected?	Yes No
	<input checked="" type="checkbox"/> <input type="checkbox"/>

Water Parameter Measurements							
Record at start, twice during and at the end of development (minimum):							
Time	Volume	Total Gallons	pH (Units)	Temp. (°C)	Conductance (ms/cm)	Turbidity (ntu)	Pumping Rate
1448	1	5	6.31	16.0	9.8	292	1 GPM
1459	2	15	6.30	15.9	9.2	Overrange	1
1512	3	25	6.37	15.6	10.4	128	1
1525	4	35	6.39	15.6	10.1	11.5	1
1538	5	50	6.40	15.6	10.8	76.7	1
1554	6	65	6.40	15.3	9.8	26.4	1

Well Developer's Signature: M. H. Jones

Harding ESE

## Page 1 of 1

**SAEP**

52985

4-12-02

PZ- TF- 01 B

Start: 08:45

End: 09:15

3-21-02

ft.

10

ft.

cup (from

N/A

ft

ft

## ft.

ft.

ft

ft

$\sim 48.5$  ft.

X

0.08 gal/ft

0.16 gal/ft (2 inch) =  
0.65 gal/ft (4 inch)  
1.50 gal/ft (8 inch)

~ 3.9

Gallons/Volume

Total Gallons Purged

08:55

09:00

09:05

09:10

09:15

Purge Volume, Gallons	10				END	
Temp, Degrees Celsius	—	12.6	12.6	12.6		
pH, units	—	6.8	6.8	6.8		
Specific Conductivity, ms	—	23.7	23.3	23.7		
Turbidity, ntu	—	712	756	587		

☐ Colored☐ Cloudy☐ Turbid☐ Odor

---

Type of Pump:

### Surge Technique:

**Size/Capacity of Pump:**

Pumping Rate: gal/min

Estimated Recharge Rate:

ft/min

• AT 10 GALLONS, ARTESIAN FLOW BEGINS DUE TO INCOMING TIDE.

~~to~~ STOP pumping ON WELL AT 10 GALLONS

DEVELOPED BY: BRADLEY WAFORST

Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985** Date: **4-16-02**

Well I.D.: **P2-TF-02A** Activity Time: Start: **15:31** End: **16:00**

Date of Well Installation: **4-8-02**

Well Depth (TOR):          ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:          ft.

## Pre-Development

Depth To Water (TOR):          ft. Depth to Sediment:          ft. Post-Development Depth to Water (TOR):          ft. Depth to Sediment:          ft.

Height of Water Column: **14** ft. X **0.08 gal/ft.**  
 0.16 gal/ft (2 inch) =  
 0.65 gal/ft (4 inch)  
 1.50 gal/ft (8 inch)

**~1.1** Gallons/Volume **~2.5** Total Gallons Purged

## Purge Data

	15:31	15:37	15:38	15:48	16:00	
Purge Volume, Gallons	START	2	2+1 QT	2+2 QTS.	2+3 QTS.	~2.5
Temp, Degrees Celsius		DRY	DRY	DRY	DRY	DRY
pH, units		}	}	}	}	}
Specific Conductivity, ms		}	}	}	}	}
Turbidity, ntu		}	}	}	}	}

## Sample Observations

☐ Clear \_\_\_\_\_

☐ Colored \_\_\_\_\_

☐ Cloudy \_\_\_\_\_

☐ Turbid \_\_\_\_\_

☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump:                                  Surge Technique:                                 

Size/Capacity of Pump:                                 

Pumping Rate:          gal/min Estimated Recharge Rate:          ft/min

## Notes:

OBSERVED BY RENE AUBE

Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985** Date: **4-16-02**  
 Well I.D.: **PZ-TF-02 B** Activity Time: Start: **15:00** End: **15:28**  
 Date of Well Installation: **4-8-02**

Well Depth (TOR):          ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:          ft.

## Pre-Development

Depth To Water (TOR):          ft. Depth to Sediment:          ft. Post-Development Depth to Water (TOR):          ft. Depth to Sediment:          ft.  
 Height of Water Column: **~49** ft. X **0.08 gal/ft**  
 0.16 gal/ft (2 inch) = **~3.9** Gallons/Volume  
 0.65 gal/ft (4 inch)  
 1.50 gal/ft (8 inch) **30** Total Gallons Purged

## Purge Data

	15:00	15:10	15:14*			
Purge Volume, Gallons	START	10				
Temp, Degrees Celsius		12.6				
pH, units		6.8				
Specific Conductivity, ms		14.8				
Turbidity, ntu		>999				

## Sample Observations

☐ Clear \_\_\_\_\_  
☐ Colored \_\_\_\_\_  
☐ Cloudy \_\_\_\_\_  
☐ Turbid \_\_\_\_\_  
☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump: **WATERRA** Surge Technique: **SURGE WATERRA & TUBING**  
 Size/Capacity of Pump:           
 Pumping Rate: **~1** gal/min Estimated Recharge Rate:          ft/min

## Notes:

\* EQUIP. BREAKS DOWN ON HORIBA U-22. DUE TO LOGISTICS OF GETTING TO THIS LOCATION, DECIDE TO PURGE TOTAL OF 30 GALLONS & MOVE ON.

DEVELOPED BY RENE AUBE

Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985** Date: **4-16-02**

Well I.D.: **P2-TF-03A** Activity Time: Start: **14:23** End: **14:50**

Date of Well Installation: **4-10-02**

Well Depth (TOR):  ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:  ft.

## Pre-Development

Depth To Water (TOR):  ft. Depth to Sediment:  ft. Post-Development Depth to Water (TOR):  ft. Depth to Sediment:  ft.

Height of Water Column: **~ 14** ft. X **0.08 gal/ft.**  
 0.16 gal/ft (2 inch) =  
 0.65 gal/ft (4 inch)  
 1.50 gal/ft (8 inch)  
**~1.1** Gallons/Volume Total Gallons Purged

## Purge Data

	14:23	14:26	14:36	14:38	14:48	14:50
Purge Volume, Gallons	START	2 GAL		DRY		DRY
Temp, Degrees Celsius		DRY	14.2	<	14.2	
pH, units		}	6.9	}	6.7	
Specific Conductivity, ms		}	21.1	}	20.1	
Turbidity, ntu		}	>999	}	>999	

## Sample Observations

- ☐ Clear \_\_\_\_\_
- ☐ Colored \_\_\_\_\_
- ☐ Cloudy \_\_\_\_\_
- ☐ Turbid \_\_\_\_\_
- ☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump:  Surge Technique:

Size/Capacity of Pump:

Pumping Rate:  gal/min Estimated Recharge Rate:  ft/min

## Notes:

DEVELOPED BY RENE ANGE

Signature: \_\_\_\_\_

# FIELD DATA RECORD - WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985** Date: **4-16-02**

Well I.D.: **P2-TF-03 B** Activity Time: Start: **13:40** End: **14:15**

Date of Well Installation: **4-10-02**

Well Depth (TOR):          ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:          ft.

## Pre-Development

Depth To Water (TOR):          ft. Depth to Sediment:          ft. Post-Development Depth to Water (TOR):          ft. Depth to Sediment:          ft.

Height of Water Column: **~49** ft. X **0.08 gal./ft.**  
 0.16 gal/ft (2 inch) =  
 0.65 gal/ft (4 inch) = **~3.9** Gallons/Volume  
 1.50 gal/ft (8 inch) = **35** Total Gallons Purged

Purge Data	13:50	13:55	14:00	14:05	14:10	14:15
Purge Volume, Gallons	10	15	20	25	30	35
Temp, Degrees Celsius	12.4	12.3	12.4	12.4	12.5	12.4
pH, units	7.1	7.0	7.0	7.0	7.0	7.0
Specific Conductivity, ms	16.9	16.7	17.3	14.3	13.6	15.1
Turbidity, ntu	>999	>999	>999	>999	>999	>999

## Sample Observations

- ☐ Clear \_\_\_\_\_
- ☐ Colored \_\_\_\_\_
- ☐ Cloudy \_\_\_\_\_
- ☐ Turbid \_\_\_\_\_
- ☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump: **WATERB E TUBING** Surge Technique: **SURGING WATERB**

Size/Capacity of Pump:         

Pumping Rate: **~1** gal/min Estimated Recharge Rate:          ft/min

## Notes:

DEVELOPED BY RENE AUBE

Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985-02** Date: **4-12-02**  
 Well I.D.: **PZ-TF-04B** Activity Time: Start: **08:00** End: **08:30**  
 Date of Well Installation: **3-25-02**

Well Depth (TOR):  ft. Screen Length:  ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:  ft.

## Pre-Development

Depth To Water (TOR): **~49** ft. Depth to Sediment:  ft. Post-Development Depth to Water (TOR):  ft. Depth to Sediment:  ft.  
 Height of Water Column: **~49** ft. X **0.08 gal/ft** = **~4** Gallons/Volume  
 0.16 gal/ft (2 inch) =  
 0.65 gal/ft (4 inch)  
 1.50 gal/ft (8 inch)  
 Total Gallons Purged:

## Purge Data

	08:05	08:10	08:15	08:20	08:25	08:30
Purge Volume, Gallons	4	9	14	~19	~24	
Temp, Degrees Celsius	—	12.9	12.9	12.9	12.9	12.9
pH, units	—	6.5	6.5	6.5	6.5	6.5
Specific Conductivity, ms	—	17.3	16.0	15.7	15.8	16.3
Turbidity, ntu	—	>999	>999	>999	>999	>999

## Sample Observations

- ☒ Clear **FLOWING V. CLEAR AT 08:30 - NTU's high due to sediment in Flow-Thru cell.**  
☐ Colored \_\_\_\_\_  
☐ Cloudy \_\_\_\_\_  
☐ Turbid \_\_\_\_\_  
☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump: **FOOT VALVE** Surge Technique: **SURGE W/ FOOT VALVE & TUBING**  
 Size/Capacity of Pump:   
 Pumping Rate:  gal/min Estimated Recharge Rate:  ft/min

Notes: **AT ~ 08:10, PIEZOMETER EXHIBITS ARTESIAN FLOW - TIDE IS COMING IN. STOP MANUALLY PURGING & WILL MONITOR THE ARTESIAN FLOW FROM HERE ON.**  
**FLOW UNDER ARTESIAN CONDITIONS ~ 1 GAL./min. DEVELOPED BY: BRADLEY LAFOREST**  
 Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985** Date: **4-16-02**  
 Well I.D.: **PZ-TF-05 A** Activity Time: Start: **09:44** End: **10:10**  
 Date of Well Installation: **4-9-02**

Well Depth (TOR):          ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:          ft.

## Pre-Development

Depth To Water (TOR):          ft. Depth to Sediment:          ft. Post-Development Depth to Water (TOR):          ft. Depth to Sediment:          ft.  
 Height of Water Column: **~14** ft. X **0.089 gal/ft.**  
 0.16 gal/ft (2 inch) =           
 0.65 gal/ft (4 inch) = **~1.1** Gallons/Volume  
 1.50 gal/ft (8 inch) = **~1.6** Total Gallons Purged

## Purge Data

	09:44	09:46	09:57	10:07		
Purge Volume, Gallons	<b>START</b>	<b>DRY ~1.5</b>	<b>~1.6</b>	<b>~1.6</b>		
Temp, Degrees Celsius		<b>DRY</b>	<b>DRY</b>	<b>DRY</b>		
pH, units						
Specific Conductivity, ms						
Turbidity, ntu						

## Sample Observations

- ☐ Clear \_\_\_\_\_
- ☐ Colored \_\_\_\_\_
- ☐ Cloudy \_\_\_\_\_
- ☐ Turbid \_\_\_\_\_
- ☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump: **WATERRA & TUBING** Surge Technique: **SURGE & PUMP W/ WATERRA**  
 Size/Capacity of Pump:           
 Pumping Rate:          gal/min Estimated Recharge Rate:          ft/min

## Notes:

**DEVELOPED BY RENE AUBE**

Signature: \_\_\_\_\_

Page 1 of 1

4-16-02

End: 09:43

4-9-02

ft.

## ft.

Total Gallons Purged

09:43

☐ Odor

## ft/mir

Signature: \_\_\_\_\_

# FIELD DATA RECORD - WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985-02** Date: **4-5-02**

Well I.D.: **PZ-TF-06B** Activity Time: Start: **10:05** End: **11:05**

Date of Well Installation: **3-27-02**

Well Depth (TOR): **ft.** Screen Length: **10** ft. Protective Casing Stickup (from ground): **NA** ft. Protective Casing/Riser Difference: **ft.**

## Pre-Development

Depth To Water (TOR): **ft.** Depth to Sediment: **ft.** Post-Development Depth to Water (TOR): **ft.** Depth to Sediment: **ft.**

Height of Water Column: **~50** ft. X **~2.08 gal/ft** = **~4** Gallons/Volume **~24** Total Gallons Purged

0.16 gal/ft (2 inch) =  
0.65 gal/ft (4 inch)  
1.50 gal/ft (8 inch)

## Purge Data

	Time	10:17	10:30	10:42	10:56	11:02	11:05
Purge Volume, Gallons		5	10	15	~21	~23	~24
Temp, Degrees Celsius		-	-	-	12.8	13.1	13.1
pH, units		-	-	-	6.9	6.9	6.9
Specific Conductivity, ms		-	-	-	12.7	12.6	12.6
Turbidity, ntu		-	-	V. TURBID	7999	7999	7999

## Sample Observations

**Black** **Black**

☐ Clear

☐ Colored

☐ Cloudy

☒ Turbid **Very dark & TURBID color - almost black**

☐ Odor

## Equipment Documentation

Type of Pump: **FOOT VALVE & TUBING** Surge Technique: **HAND SURGING FOOT VALVE & TUBING**

Size/Capacity of Pump: **ft/min**

Pumping Rate: **~0.4** gal/min Estimated Recharge Rate: **ft/min**

## Notes:

**Equipment steam cleaned after use -**

Signature: **Thomas D. Dwyer**

## Page 1 of 1

Date: 4-15-02

Activity Time: Start: 14:48 End: 15:34

Protective Casing/Riser Difference:  ft.

Depth to Sediment:  ft.

~2.8 Total Gallons Purged

☐ Clear \_\_\_\_\_

☐ Colored \_\_\_\_\_

☐ Cloudy \_\_\_\_\_

☐ Turbid \_\_\_\_\_

☐ Odor \_\_\_\_\_

Estimated Recharge Rate:	ft/min
--------------------------	--------

Signature: \_\_\_\_\_



## Page 1 of 1

Date: 4-15-02

Activity Time: Start: 14:00 End: 14:31

Date of Well Installation: 4-3-02

Protective Casing/Riser Difference:  ft.

Depth to Sediment:  ft.

4.5 Total Gallons Purged

14:31

Purge Volume, Gallons		~3	~4		4.5	
Temp, Degrees Celsius				12.2		
pH, units				6.7		
Specific Conductivity, ms				34.4		
Turbidity, ntu				58.2		

PUMPED/DRY

- |                                  |       |
|----------------------------------|-------|
| <input type="checkbox"/> Clear   | _____ |
| <input type="checkbox"/> Colored | _____ |
| <input type="checkbox"/> Cloudy  | _____ |
| <input type="checkbox"/> Turbid  | _____ |
| <input type="checkbox"/> Odor    | _____ |

Surge Technique:

Pumping Rate:	gal/min
---------------	---------

Estimated Recharge Rate:	ft/min
--------------------------	--------

TOTAL 4.5 GALLONS PURGED  
DEVELOPED BY RENE AUBE

Signature: \_\_\_\_\_

# FIELD DATA RECORD - WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985** Date: **4-15-02**

Well I.D.: **P2-TF-08B** Activity Time: Start: **13:17** End: **13:42**

Date of Well Installation: **4-3-02**

Well Depth (TOR):          ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:          ft.

## Pre-Development

Depth To Water (TOR):          ft. Depth to Sediment:          ft. Post-Development Depth to Water (TOR):          ft. Depth to Sediment:          ft.

Height of Water Column: **~49** ft. X **0.08 gal/ft.**  
 0.16 gal/ft (2 inch) =  
 0.65 gal/ft (4 inch)  
 1.50 gal/ft (8 inch)  
**~3.9** Gallons/Volume **20** Total Gallons Purged

## Purge Data

	13:27	13:32	13:37	13:42		
Purge Volume, Gallons	10			20		
Temp, Degrees Celsius	12.3	12.2	12.2	12.2		
pH, units	6.8	6.7	6.7	6.7		
Specific Conductivity, ms	14.8	14.4	15.1	14.3		
Turbidity, ntu	303	513	7999	7999		

## Sample Observations

- ☐ Clear \_\_\_\_\_
- ☐ Colored \_\_\_\_\_
- ☐ Cloudy \_\_\_\_\_
- ☐ Turbid \_\_\_\_\_
- ☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump: **WATERA & TUBING** Surge Technique: **SURGING OF WATERA & TUBING**

Size/Capacity of Pump:         

Pumping Rate: **~1.3** gal/min Estimated Recharge Rate:          ft/min

## Notes:

DEVELOPED BY RENE AUBE

Signature: \_\_\_\_\_

# FIELD DATA RECORD – WELL DEVELOPMENT

Page 1 of 1

Project: **SAEP** Job Number: **52985** Date: **4-17-02**

Well I.D.: **PZ-TF-09 A** Activity Time: Start: **09:35** End: **09:55**

Date of Well Installation: **4-4-02**

Well Depth (TOR):  ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:  ft.

## Pre-Development

Depth To Water (TOR):  ft. Depth to Sediment:  ft. Post-Development Depth to Water (TOR):  ft. Depth to Sediment:  ft.

Height of Water Column: **~14.5** ft. X **0.08 gal./ft.** = **~1.2** Gallons/Volume

0.16 gal/ft (2 inch) =  
0.65 gal/ft (4 inch)  
1.50 gal/ft (8 inch)

Total Gallons Purged:

## Purge Data

	09:35	09:45	09:55			
Purge Volume, Gallons	1 QT.	DRY	DRY			
Temp, Degrees Celsius	DRY					
pH, units						
Specific Conductivity, ms						
Turbidity, ntu						

## Sample Observations

☐ Clear

☐ Colored

☐ Cloudy

☐ Turbid

☐ Odor

## Equipment Documentation

Type of Pump:  Surge Technique:

Size/Capacity of Pump:

Pumping Rate:  gal/min Estimated Recharge Rate:  ft/min

## Notes:

OBSERVED BY RENE AABE

This piezometer was damaged - subsequently replaced on 5-8-02

Signature:



# FIELD DATA RECORD - WELL DEVELOPMENT

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Project: **SAEP** Job Number: **52985-02** Date: **4-10-02**  
 Well I.D.: **P2-TF-10B** Activity Time: Start: **14:50** End: **15:50**  
 Date of Well Installation: **3-28-02**

Well Depth (TOR):        ft. Screen Length: **10** ft. Protective Casing Stickup (from ground): **N/A** ft. Protective Casing/Riser Difference:        ft.

## Pre-Development

Depth To Water (TOR):        ft. Depth to Sediment:        ft. Post-Development Depth to Water (TOR):        ft. Depth to Sediment:        ft.  
 Height of Water Column: **248** ft. X **0.08 gal/ft** = **23.8** Gallons/Volume **30** Total Gallons Purged  
 0.16 gal/ft (2 inch) =  
 0.65 gal/ft (4 inch)  
 1.50 gal/ft (8 inch)

## Purge Data

	14:55	15:00	15:10	15:15	15:40	15:50
Purge Volume, Gallons	5	10	15	20	25	30
Temp, Degrees Celsius	13.7	—	13.8	13.9	—	13.8
pH, units	7.5	—	7.1	7.0	—	6.9
Specific Conductivity, ms	37.6	—	30.8	31.4	—	21.1
Turbidity, ntu	7999	—	7999	7999	—	7999

## Sample Observations

☐ Clear \_\_\_\_\_  
☐ Colored \_\_\_\_\_  
☐ Cloudy \_\_\_\_\_  
☒ Turbid \_\_\_\_\_  
☐ Odor \_\_\_\_\_

## Equipment Documentation

Type of Pump: **FOOT VALVE** Surge Technique: **SURGE W/ FOOT VALVE & TUBING**  
 Size/Capacity of Pump:         
 Pumping Rate: **~ 0.5** gal/min Estimated Recharge Rate:        ft/min

## Notes:

DEVELOPED BY: BRADLEY WAREST

Signature: \_\_\_\_\_